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ABSTRACT

This volume contains the seventeen papers presented to the 1965, 1966, and 1967 annual meeting of the North Central Reading Association. The papers are grouped into four sections: Problems for the Reading Specialist, College Reading Programs and Instructional Techniques; Research on Reading; and the Emerging Junior College Program. Some of the topics are adult basic education, reading tests and examination performance, descriptions of several college and junior college programs and research studies, programs and techniques for handicapped and disadvantaged students, and relationships between rate and comprehension. (TO)

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COLLEGE and ADULT READING

V

THE
FIFTH YEARBOOK
OF THE
NORTH CENTRAL READING ASSOCIATION

Edited by

DAVID M. WARK
Reading and Study Skills Center
Student Counseling Bureau
University of Minnesota

1968

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PREFACE

This volume is not, in the usual sense, a yearbook. It contains the papers presented to annual meetings of the North Central Reading Association. But the meetings spanned a period of three years, and took place in three different cities. The members of the Board of Directors believe that the frustrating wait for papers is more than balanced by a larger, more comprehensive volume at longer intervals.

The three meetings covered in this publication were held in Minneapolis (1965), Chicago (1966), and Detroit (1967). The meetings were programmed by David Wark, George Watson and John Hurst, and Roger Pepper, respectively. To them, thanks for hard work well done. For any errors that I let slip, which detract from their efforts, I offer them, and you, my apologies.

May you enjoy this, and succeeding, NCRA "Yearbooks."

D.M.W.

ADULT BASIC EDUCATION -- A NEW DIMENSION IN READING

Edward G. Summers
Indiana University

In recent years Congress has passed legislation which is having a significant effect on many areas of education. All 50 states and the District of Columbia are now receiving aid from one or more of the federal programs. For fiscal year 1965 more than 1.3 billion dollars will be distributed. This allocation of funds by the 88th Congress includes new programs and programs already operating or expanding.

Concurrently a remedial battle of considerable proportion in young adult and adult education is being waged with equal effort. The battle involves the devastation of past deprivation, the devastation that the previously cited federal programs are designed to prevent. It involves a population ranging in age from less than twenty to over sixty. This group was either forced out, dropped out, pushed out, or was never exposed to the common pattern of public education. Their expulsion from education, or lack of exposure to it, has a fantastically tangled etiological pattern involving the whole spectrum of cultural and economic variables. The battle being waged for this group could be termed a "holding" action developed to remedy past deprivation until the full effect of new legislation and aid can take effect. This population, for the most part, has been ignored in the upgrading of education. Their problems are unique and much of the legislation passed to aid them is without precedent. The need to improve the quality of education for them is no less urgent than the need to improve education for those currently in school. The remainder of this presentation will concern itself with some of the problems of that segment of the adult population in need of literacy training and basic education.

The Extent of the Problem

One problem in working with the under-educated is the difficulty in actually defining and enumerating them. They often exist in areas that have been defined as "pockets of poverty," but they are also found in other locations. Statistically, the 1960 United States Census (11) provides the most exact enumeration. Using as a base figure the proportion of the national population 18 years of age and older with less than a sixth grade education, there are roughly 11.5 million adults handicapped by a lack of basic education. Under the Economic Opportunity Act of 1964, the Government appropriated $18,344,000 to provide for their educational needs.

Table 1 extracts figures for nine of the Midwestern states. Thus, in the area where members of the North Central Reading Association operate academic reading programs for secondary, college, and adult students, there are 1.8 million adults 18 years of age and over who have less than a sixth grade education.

Census figures based on the amount of schooling reported by individuals are known to be inaccurate. Unfortunately, the figure 1.8 million has to be a conservative estimate. It has often been found in working with such groups that the census figures have to be doubled to provide an accurate estimate. Of course, the figures deal only with reported level of schooling since there is no real way of knowing the actual functional educational level of the individuals involved. These figures are particularly sobering when the social and economic importance of a literate population is considered. It is no longer realistic to accept six years of schooling as being adequate for comprehension and communication in

TABLE 1

For adults: Allotments for basic education, fiscal year 1965, under the Economic Opportunity Act of 1964 -- 9 selected states

STATE	POPULATION (18 years old and over with less than 6th grade education)	ALLOTMENT
Illinois	517,183	$ 798,670
Indiana	178,192	275,177
Iowa	70,074	108,213
Michigan	339,026	523,548
Minnesota	98,952	152,809
North Dakota	26,136	50,000
Ohio	421,276	650,564
South Dakota	21,947	50,000
Wisconsin	168,461	260,149
TOTAL	1,841,247	$2,869,130

today's world. For those who are mentally competent less than twelve years of schooling holds meagre promise.

Census figures also indicate that there are 25 million adults with less than an eighth grade education and 58 million who have not completed high school. Perhaps the most tragic group of all are the three million adults in this country with no reported schooling at all. To emphasize the magnitude of the problem in providing for this group it has been estimated that to involve adequately the adults who have less than an eighth grade education would take one-third of the desks now available in the elementary schools of the nation. To accommodate those lacking a high school education would mean multiplying by six the number of learning stations presently in the high schools of the nation. These statistics are indeed formidable and yet a start has been made in the direction of balancing the requirements of education for this group with the requirements of other aspects of the total educational program: elementary, secondary, technical and higher education.

Although the statistics are helpful they do not go far enough in adequately defining the characteristics of this population. Following are excerpts from sources which add detail to the statistics presented.

Milwaukee County Department of Public Welfare, Wisconsin (6)

The relief client who is seeking employment often lacks those materials needed to achieve his goal. He may find himself in any one of the following situations:

1. Unable to read and write, he cannot qualify for basic education.
2. A lack of adequate basic education prevents

him from qualifying for vocational training. This individual, because he is usually functioning below the eighth grade level, knows very little about how to find and hold a job.

3. Deprived of adequate vocational training, he cannot qualify for jobs that may be available.

4. His present vocational training and experience may not be useful and retraining in a new occupation becomes necessary.

5. He may have a marketable occupation but does not know how to do a job search and sell his abilities.

6. The seasonal nature of his occupation warrants training in another, which will give him steady employment or provide employment during the lay-off period.

7. Not having a high school diploma may prevent him from gaining employment, even though he may have adequate vocational training.

Job Opportunities Through Better Skills, Illinois (13)

When the JOBS staff began its orientation and training session two weeks before the registration started, the anxiety question constantly arose, "What will the trainees be like?" There was continuous discussion about what "hard-core" meant. There was, perhaps, even some fear about dealing closely with youth from the streets. After the program had been underway for some months, we were frequently asked, "Did you, in fact, get 'hard-core' youth?"

The answer to the second question was a hesitant "Yes." ...Among our trainees were a few "pimps," prostitutes and petty gangsters. Though most of the difficulties with the police centered around juvenile crimes -- street fights, loitering, truancy or disorderly conduct -- there were a small number who had been convicted of armed robbery, burglary, auto theft or petty larceny.

To answer the first question was difficult. ("What will the trainee be like?") Our experience indicates that there was considerable diversity among the trainees and that generalizations tended to break down. We found some general characteristics as a total group, but within that group was a multiplicity of abilities and attitudes, not really so different from any sampling of the population. The one general conclusion which might be most applicable was that the JOBS trainees did represent a young adult group that have been culturally "bound." The vast majority have not been able, for one reason or another, to participate fully in the American middle class milieu. They were, as a result, generally under-educated and more non-verbal than their middle class counterparts. Poverty and restriction of job entry and failure experience had in general shattered egos. The JOB trainees, 98 per cent negro, were the products of an impersonal, urban society.

The above quotations have been taken from a report on welfare recipients in a midwestern city, and a report on a training program designed to upgrade the employability of disadvantaged young adults in one of the nation's largest cities. They are typical of numerous such reports and accurately illustrate the characteristics of the undereducated and the milieu of poor education and economic scarcity in which they exist. In programs now operating, participants range in age from less than twenty to over sixty; live in large cities, small towns and rural and urban areas; exhibit the total range of human abilities; may or may not speak the English language; can be either male or female; and represent all racial and ethnic groups.

In spite of the diversity, there are some general characteristics of this adult group: they lack a sound foundation of academic skills and are usually poor readers or nonreaders; many lack readiness for learning and have never developed a "learning strategy"; they are often members of minority groups; they often know little of the world of work; and they almost always react negatively to authority. Such individuals have either left the standard pattern of education or have never been related to it. Education for them at this point in their lives has a "second chance" element or even a "last chance" quality about it in many respects.

Attempts at Solutions

Few broadly based, concentrated efforts have been made in the past to provide education for such individuals. Cortright (3) examines the sporadic efforts to provide literacy training in this country. In the first quarter of the nineteenth century a number of non-government organizations held a national literacy council. In the 1930's the WPA and the CCC groups developed limited programs to reach young adults including an attempt to develop a teaching procedure and to provide an instructor's manual, finally developed by the late William S. Gray. During World War II the United States Army undertook a major program with the illiterates identified through the draft program. A quarter of a million men were eventually graduated as literate from the program. In the 1950's interest subsided with only sporadic efforts by public schools and NAPSAE. Other efforts included some university programs to provide specialists, the formation of literacy councils including professionals and volunteers, and the publication of some materials by interested groups. Private agencies such as churches, clubs and civic organizations have been interested in the problem over the years and have aided in preparing a national climate for the elimination of illiteracy.

The efforts listed did not begin to reach the total problem. Consequently "hard core" of the disadvantaged has never been included in programs on any scale. A recent report, examining the paradox between the affluent society and what has recently been described as "The Other America," asks the question: "How has education in the United States been placed in such a position where it knows so little about educating illiterate adults?" (4) It is becoming increasingly apparent that this country can no longer tolerate large populations of undereducated adults. It is becoming almost axiomatic in contemporary society that poor education is the hallmark of poverty. Thus, the major effort needed to reverse the cycle of poverty is intensive rehabilitation of which adult basic education must be a major factor.

Federal Programs

A number of federal programs now provide funds for basic education. (7) The Vocational Education Act of 1963 encourages high schools to develop programs to decrease drop-outs. The Community Work and Training Program includes occupational training for welfare recipients. The Manpower Development and Training Act of 1962 provides funds for further education for youth from seventeen to twenty-one, including basic education for adults lacking skills needed to enroll them in an occupational training program. Other federal acts, related to the improvement of libraries and the development of educational materials, can also be used to fund projects for adults with limited education.

The most far reaching legislation occurred with the passage of the Economic Opportunity Act of 1964 which established the "war on poverty." (14) The legislation provides funds in seven areas including the establishment of the Job Corps for young men and women, urban and rural community action programs to combat poverty, special programs to aid migrants and the seasonally employed, employment and investment incentives, and work experience programs. Although other parts of the Act are related to the undereducated, Title IIB of the Urban and Rural Community Action Program provides the most direct aid for literacy training and basic education. Title IIB defines adult basic education as: (15)

> ...elementary level education for adults with emphasis on the communication and computational skills such as reading, writing, speaking, listening, and arithmetic; and using as content for teaching these skills such adult experiences as consumer buying practices, health habits, relations with other members of the family and community, homemaking, and citizenship responsibilities.

For the nine selected midwestern states identified previously, almost three million dollars is available for adult basic education programs. The Act requires that a plan be submitted from the state educational agency outlining the proposed program of instruction. States are urged to plan proposals in conjunction with community action programs, serve adults who are participating in work-experience programs, coordinate the program with other agencies serving the poor, develop methods to identify and recruit impoverished adults in need of education, and heavily involve the poor themselves in implementing programs of instruction.

In submitting comprehensive proposals under Title IIB legislation, most states had to develop programs in areas where previous guidelines were non-existent. An experimental framework for planning curriculum on a continuous and sequential basis had to be produced for teachers and others responsible for the new instructional programs. Many of the classroom techniques, teaching methods, materials for instruction, and course organizations which used to impart skills to children in traditional patterns of education are often of little or no use in working with adults. The skills needed by the adults are the same, but the context and organization of learning are different. Obtaining teachers who can work with adults and supplying adult oriented instructional materials are the two most pressing problems in establishing new programs.

Responses by the Teaching Profession

Although there is no way of estimating precisely how many teachers are available it will be impossible to fully meet the demand. Most programs will operate on a limited basis, with make-do teachers, until the gap is narrowed. Training programs to provide teachers for the undereducated adult have never existed on any scale in colleges and universities. Little has been done in defining the type of education needed by such teachers. It can be predicted that patterns of education which depart radically from those established for the preparation of elementary and secondary teachers will emerge. The concept of a four or five year preparation period, including a broad background in liberal arts and professional education, will most likely be shelved because of the urgent need for teachers. Many states are already providing means to circumvent the usual certification requirements in legally permitting such teachers to operate. It is known, however, that a different type of training is necessary and that the good elementary or secondary teacher, with predominantly middle class orientation, will not necessarily make a successful transition to adult education classes. It is vital that the training developed be planned and coordinated through existing teacher education institutions. Much can be adopted from existing programs. It would be unfortunate if the vast reservoir of expertise which exists within the faculties of teacher training institutions could not be brought to bear on the problem. New patterns of training, involving a new concept of responsibility on the part of existing institutions, will have to emerge if the type of teacher needed to work with adults is to be produced.

Other Responses

During the summer of 1965 a unique first in adult basic education occurred. Recognizing the immediate need for teachers, the Ford Foundation supported workshops in three locations in the United States. The workshops were joint efforts between the Foundation, local schools, and colleges and universities. States with Title IIB programs in advanced stages of development were invited to send participants from state departments of education, public schools and colleges and universities actively involved, or anticipating involvement, in various phases of adult basic education. The major purpose of the Inter-University Workshop on Adult Basic Education was to enable the participants to return to their own states and develop training programs for teachers. Participants included teachers and administrators directly responsible for Title IIB programs. In addition, most states also included representatives of colleges and universities that had expressed an interest in developing teacher training programs. The workshops were stop-gap measures and by no means solved all the problems in educating the undereducated. The content of the workshops included the sociological and psychological context of the undereducated; identification and recruitment of students; testing, placement, and counseling; organization of the instructional program; teaching methodology;

training theory and design; and implementation and evaluation of federal programs. The workshops served a valuable function in bringing together individuals from various areas working with the undereducated adult.*

A number of recent reports and projects have analyzed problems related to providing adequate instructional materials for adult groups. A United States Office of Education Task Force (12) surveyed more than 500 different types of commercially produced materials and reported that such materials generally did not fit the characteristics of the groups for which they were being used. In addition, the reading level of materials was too high, often by two or three grade levels; the tone or approach in writing was childish; language skills and basic word attack skills needed by functionally illiterate adults were not taught; content was too formal and pedantic; and integration of reading, writing and arithmetic with other subject matter in functional context was lacking.

The American Textbook Publishers Institute held a conference in 1964 (1) to consider curriculum needs, instructional materials and research in progress for adult basic education and job skill training. The conference included representatives from education, government, the library field, foundations, and private organizations. The need for better instructional materials to meet new demands of society was a constant theme in all sessions of the conference.

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*Five handbooks including the areas of teacher training, reading instruction, counseling and testing, curriculum and the psychology of the disadvantaged will be published in the near future based on the results of the three Ford Foundation sponsored workshops.

Bibliographies of materials useful in adult basic education programs are available from a number of sources (5), (2), (9), (10). The materials can be used in basic education but there would be general agreement that few totally adequate materials have been developed. The majority of materials now available were developed to teach technical literacy only. Literacy is the major tool in education but it does not insure education in the broadest sense. A point of view is gradually developing which places literacy training within the larger context of the total social, cultural, vocational, and psychological re-education of the adult. In many programs such objectives have played a minor role in selecting materials. Usually, the materials at hand have in large part established the objectives. As a broader concept of objectives is accepted, improved instructional materials will also be forthcoming to implement these objectives.

Olsen (8), in analyzing the need for new materials from the publishers point of view, makes the following suggestions:

1. Materials should be so organized that they can be used in part or whole, reasonably priced, soft-cover or paperback and packaged in broad systems or units.

2. Emphasis should be placed on reading, language arts, and number skills utilizing newer techniques of instruction.

3. The central emphasis should be on learning to read, write, and handle mathematics in meaningful situations. There is a special need for job-oriented materials written at lower levels.

4. The materials should use and illustrate concepts that are on an adult level including job experiences and personal problems.

5. Materials should involve the adult immediately and include filmstrips, tapes, teaching programs, and other media.

6. Tone and approach should be mature, direct, practical, and concrete with the speech following colloquial patterns. Sentences should be short with simple syntax.

7. A sentence rather than a word approach should be used in teaching reading because even adults without sufficient word attack skills have already internalized the word order of the language.

8. After some sentences have been learned, word attack skills can then be taught in terms of the words already known.

Until adequate programs can be developed in colleges and universities the job of training teachers will continue to be done by local directors of adult education, school superintendents, principals, and by the teachers themselves. The materials of instruction will continue to be narrowly based and inappropriate for the needs of adults until the professional workers in the field can communicate to the publishing industry exactly what type of material is needed. Before this can be done, thorough examination of the objectives of adult basic education and translation of objectives into goals upon which instruction can be based has to occur. Many problems will have to be faced in making a serious effort to upgrade education for adults. The training of teachers and the provision of adequate instructional materials will continue to be two pivotal needs in developing instructional programs.

Edward G. Summers

Conclusion

The complex, interrelated problems relative to expanding opportunities for the undereducated are not amenable to easy solution. This paper has attempted to pinpoint the diverse population in need of education, analyze past efforts to provide instruction, and describe current efforts, including Title IIB programs, which are being made in adult basic education. In addition, the immediate need for trained teachers and the provision of adequate instructional materials have been underscored. As the needs of differing psychological and sociological subgroups in the society of the undereducated are identified, new resources will have to be developed and creative programs inaugurated. Even given every opportunity possible through well defined instructional programs, the road to social and cultural betterment for the undereducated adult remains at best a difficult and discouraging path.

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DEEDS AND NEEDS IN READING TESTS

Dale E. Bennett

It is generally conceded that the year of 1910 marks the beginning of the scientific movement in education. The publication of the Gray Standardized Oral Reading Paragraphs in 1915 marked the first in a long list of reading tests which have been published up to the present time. It is, therefore, perhaps axiomatic that some type of inventory would be in order after one half century of producing reading tests. Certainly if one is looking for either the sweet aura of contentment which comes from a job well done or, on the other hand, one is attempting to determine future direction or needs in testing at the secondary or college-adult level, then some type of stock-taking would appear to be in order.

The logical starting point for one assigned the task of assessing the needs of the field of reading testing at the secondary and college-adult level would be to determine what has been done in this area to the present time. The primary reference utilized to assess the current status of reading tests which are available for use by reading teachers at the secondary and college level is an unpublished paper by Raygor and Bennett entitled, "A Guide to High School and College Reading Tests."* The purpose of that document was to collate and present pertinent data for group administered reading tests which are designed for use with high school and college students. The authors attempted to locate every reading test available at the specified levels and then to gather all the technical and empirical data which was felt to be most often desired by persons who are faced with the task of reading test selection. The format which finally evolved for the compendium consisted of the following information, when it was available, for each test: the number of forms which are available, the grade levels for which the instrument is designed, the time which is required for (1) the pupil to take the test and (2) the total time required to administer the test, the date of publication, the publisher's name and address, the authors' names, the general abilities purported to be measured by the instrument, and whether other levels are available for use at grades below the secondary level.

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*Available from Dr. Alton Raygor, 101 Eddy Hall, University of Minnesota, Minneapolis, Minnesota 55455.

In addition to this usual information the investigators decided to include a brief summary of salient reviewer comments, an assessment of the instrument's reliability and validity, and an analysis of the content of each individual test. The investigators assumed that the Buros' Mental Measurements Yearbook (1) would provide the most logical starting point for locating the tests available at the secondary and college-adult level. It was later decided to check Buros' Tests in Print (2), after the number of tests located rose to unexpected heights, in order to determine which of the instruments located were still in print as of June 1, 1961.

The results of that analysis produced some rather surprising facts which are worthy of note. The investigators found, much to their surprise, a total of 58 different reading tests were designed for use with high school and college students. It should be pointed out, however, that four of the tests included in this total were found to be currently out of print. The rationale for including them in the compendium was that these four tests might still be in rather widespread use around the country.

Table I

CLASSIFICATION OF HIGH SCHOOL AND COLLEGE READING TESTS

36	Survey	
2	Speed	
11	Content Areas	
	1	Commerce
	3	Natural Science
	3	Social Science
	1	General Science
	1	History
	1	English Literature
	1	Diagnostic Reading Test, Section III Rates of Reading--General, Social Studies, & Science
6	Comprehension	
3	Vocabulary & Comprehension	
1	Vocabulary	
2	Miscellaneous	
61	TOTAL*	

*For purposes of classification the four sections of the Diagnostic Reading Tests were considered separately.

Table I presents a breakdown of the secondary and college-adult reading tests considering the general nature of the instrument as a whole. For purposes of this classification, a survey test is defined as one which contains subtests which provided a measure of speed, vocabulary and one or more types of comprehension. The speed tests yield a rate of reading score and nothing else. The content area tests are those which are designed to provide an indication of the student's ability to read the material within a specified content field; they may or may not contain subtests which yield separate scores. The comprehension tests yield only a single score reflecting the student's power of comprehension and provide no subtests of either rate or vocabulary. Depending upon the point of view, instruments which contain subtests for both vocabulary and comprehension are often times considered, for purposes of generic classification, as survey type instruments. However, for the purpose of this classification the writers chose to consider this type of instrument apart from the general survey tests. The remaining categories presented in Table I appear to be self-explanatory.

It will be noted that the total number of instruments reported in Table I differs from the total which was cited earlier. In classifying the tests according to type, the writer decided to consider the four sections of the Diagnostic Reading Tests separately. This fact thus accounts for the difference in totals. Since each section of the DRT is basically a separate test the writer felt that lumping the entire instrument into one category would perhaps conceal some valuable information.

It is evident from examining Table I that the survey type test is by far the most common instrument available for us by secondary and college teachers of reading. Actually the survey type instrument makes up 59 per cent of all of the reading tests available for use with secondary or college students.

An examination of the component subtests in each of the instruments located produces a certain enigma. This particular enigma arises when one compares the empirical nature of reading tests with the results available from the factor analytic research studies which have been reported in the literature. The factor analytic studies attempt to explore the nature of the reading process by utilizing already existing reading tests. The results of these studies basically indicate that, when given the instruments, we can account for the major portion of the measurable variance with a small number of factors. This fact was demonstrated in the study by Davis (3) as early as 1944 and again more recently in the work of Holmes and Singer (4). Lennon (5), after reviewing the existing literature, concluded that most of the measurable variance in reading tests could be accounted for by four factors. The four factors identified and labeled by Lennon were: 1) a general verbal factor; 2) a factor which he labeled comprehension of explicity state material; 3) the comprehension of implicit or latent meaning; and 4) an element which he termed "appreciation."

On the other hand, examination of the instruments which are available for testing reading ability at the high school or college level reveals a diverse array of sub-test titles. Traxler (6), in 1951, critically analyzed 28 reading tests, each of which contained three or more sub-tests. He found a total of 49 different subtests in the instruments which he analyzed, but 23 of these subtests were found to be included in only one instrument. Traxler's findings would appear to suggest that the labeling of subtests is largely a matter of personal convenience rather than an accurate reflection of the specific nature of the ability which the test purportedly measures. This same condition prevails today in reading tests which are designed for use with secondary or college students.

A further disturbing element is found when one examines the subtest inter-correlations in many of the reading tests which are in use today. Examination of the inter-correlations between subtests contained in many reading tests serves to cast doubt upon the question, "Is the test measuring what the title or name says it is measuring?" In many instances, when one examines the subtest inter-correlations it is frequently noted that the correlation coefficients are often so high that, for all practical purposes, the two tests are essentially measuring the same thing. For example, when the correlation coefficient between subtest X and subtest Y approaches the neighborhood of .90, it could be assumed that the two tests are measuring the same ability or function. In this example, the coefficient of .90 indicates that 81% of the measurable variance can be attributed to the relationship between subtests X and Y. Further, the assumption could be made that subtest X, for example, is not contributing much significant information beyond that which is contributed by subtest Y.

The conclusion to be drawn from the evidence cited above certainly seems to indicate the presence of an obvious conflict which needs to be reconciled.

The decision to undertake a chronological analysis of currently available reading tests for the secondary and college-adult reading levels yielded some interesting information. Figure I presents the results of this analysis in graphic form. Since the year 1910 ushered in the scientific movement in education, this would appear to serve as a logical starting point for analyzing the extent of activity in testing at the secondary and college-adult levels. The analysis by decades utilized two pertinent aspects of the reading tests. First the writer considered the date of origin or the year when the test first appeared in print. This information is presented graphically in Figure I as the bottom bar. The writer secondly looked at the date of latest revision for existing instruments and this is represented in Figure I by the top bar.

Inspection of Figure I reveals only one bar for the decade 1910-19. This is due to the fact that there was only one test located which was introduced during this period. Since the beginning of this decade marked the beginning of the scientific movement in education it stands to reason that one would not logically expect to find tests being revised during this period. Further examination of Figure I reveals that the decades of the 20's, 30's, 40's and 50's were all approximately equal in terms of the number of reading tests which were introduced during each period. Figure I further indicates a gradual but steady progression in the number of instruments revised during each decade with the peak period of activity occurring in the 1950's.

The rather large number of tests which were revised in the 50's tempts one to speculate as to possible factors which would provide the impetus for such activity. Two possible explanations can logically be suggested. One, the large number of tests which were revised during this period may be a reflection of the "post-sputnik reaction" which touched practically every phase of the educational enterprise. The second possible explanation is that, with increasing sophistication in the field of measurement and test construction, test authors suddenly realized the perils of an out-dated instrument, and hastened to update them.

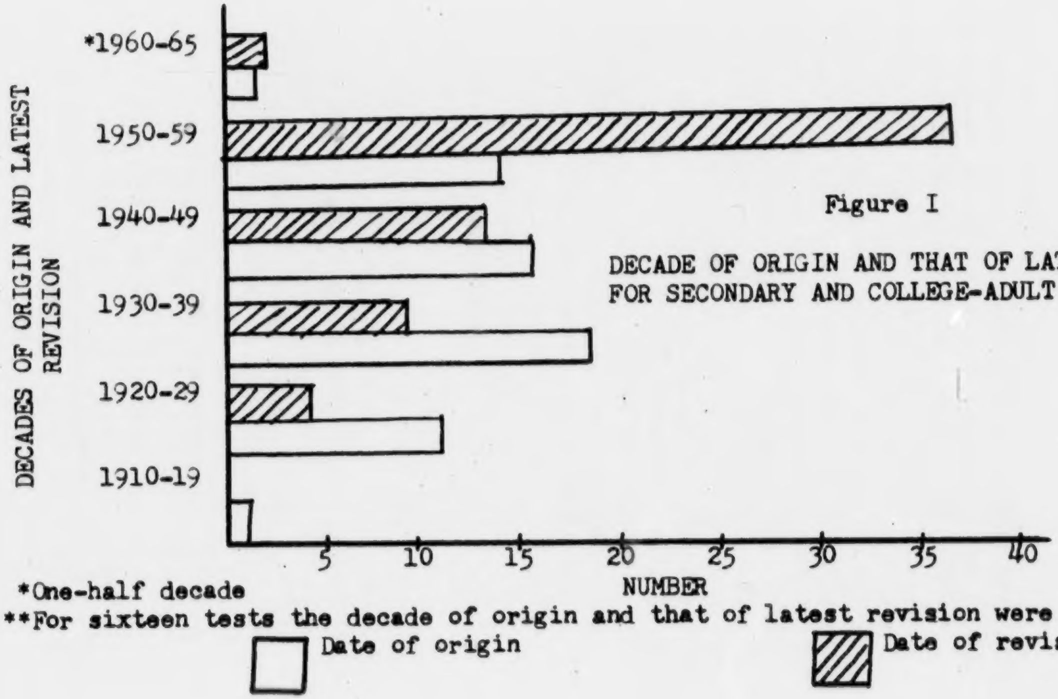

Figure I

DECADE OF ORIGIN AND THAT OF LATEST REVISION FOR SECONDARY AND COLLEGE-ADULT READING TESTS

*One-half decade

**For sixteen tests the decade of origin and that of latest revision were the same.

Both of these explanations are basically a form of crystal ball gazing and it is not known which, if either, is correct. They are simply offered as possible explanations for the rather unusual amount of activity which was found to take place during this decade.

The results which are presented in Figure I for the period 1960-65 are disquieting and surprising. It should be pointed out that the results presented here are for only one-half decade and thus some distortion is possible when comparing this information with that of the other periods in Figure I. With the amount of activity which took place in the decade of the 50's in both test construction and revision, one would logically expect to find a continuation, and perhaps even an increase in activities of this type. However, from the information presented in Figure I, this is apparently not the case. This lack of activity in the area of testing at the secondary and college-adult levels during the first half of this decade is certainly suspect. Immediately, one begins to speculate as to whether the lack of activity, as indicated in Figure I for the 60's, is due to the fact that we have reached a point of saturation in terms of the number of instruments which the consumers' market can stand, or whether we have reached a state of impass with regard to test construction and revision. If the reflection of the current status of activity in test construction and revision represented in Figure I is indeed accurate, it is certainly an indication of an unhealthy condition which is in need of immediate correction.

Recognizing that relying upon the copyright date alone would interject a factor of bias due to the publication lag, the writer felt it imperative to review other sources of information which would be likely to contain evidence of recent research activities in the areas of testing and evaluation of reading. The Bliesmer summaries of research which appear in the annual yearbooks of the National Reading Conference were selected for review since these would logically contain evidence of any activity in the areas of testing and evaluation of reading which had taken place during the first half of the 60's decade. A thorough review of the research summaries covering the years 1960-64 indicated that the evidence presented in Figure I is entirely accurate. The Bliesmer summaries for this period reported studies dealing with already existing instruments, prediction studies, factors affecting test results or test effectiveness, cloze procedures, and some exploratory studies dealing with the construction of tests of reading flexibility. It is still entirely possible, however, that there is a considerable amount of activity in the field of testing and evaluation at the secondary and college-adult levels which has not been reported in the literature. Hopefully this is the case. With the lack of activity in testing which is evident during the first half of the present decade, one can only hope that the last half of this decade will result in considerable attention being devoted to test construction and revision in the field of reading at all levels.

There are a number of apparent needs which are evident from past deeds in the areas of measurement and evaluation of reading at the high school and college-adult levels. Errors of commission or omission evident from the past should provide an indication as to what needs to be done in the future. These needs should suggest the direction and scope for future activity in the realm of reading testing.

First, examination of the instruments which are currently available for measurement of reading at the secondary and college level reveals that there are far too many out-dated instruments on the market today. There are tests being used today that have not been revised for twenty years or more. Therefore, the suggestion that these obviously out-dated instruments either be removed or revised would appear to be perfectly justified and defensible. Such instruments cannot possibly incorporate the continuing advances which have been made in the areas of measurement and evaluation.

Second, the multitude of instruments available would appear to warrant the establishment of an agency within the profession charged with the responsibility for providing critical analyses of all present and future instruments. There is a need for a single resource where the reading teacher can locate those instruments which would be most appropriate for his needs. These analyses should be drafted with the objective of insuring "lay" professional understanding. Every teacher cannot logically be expected to be a measurement specialist, but they can be intelligent test users when provided with the necessary technical data spelled out in terms they can understand.

Third, there is a need for a concerted research effort which will attempt to reconcile the conflict between the results of the factor analytic studies and the empirical nature of most of our present reading tests. We need to compare the results from tests which are constructed to measure three or four primary factors with those obtained from tests which measure many "non-primary" factors. We need to know whether a reading test which is constructed to measure only primary factors will provide the necessary diagnostic information which the teacher needs. We need to know whether the primary factors differ significantly from treatment factors. The basic question of whether we need the present plethora of subtests is in need of a definitive answer.

Fourth, there is an urgent need for the formulation and adoption of a set of operational definitions in the field of reading. An operational definition can perhaps best be described as defining a term by stating the operations or procedures employed in distinguishing the objects referred to from any others. According to the doctrine of "operationalism" all meaning of any term rests ultimately upon the facts of direct observation. The lack of operational definitions has resulted in the use of imprecise terminology in the field of reading and this has definitely had a deleterious effect. It is possible to hypothesize that the lack of a set of operational definitions has produced the plethora of reading subtests with different labels, such as we find existing today. This use of imprecise terminology in the field of reading has had further impact upon our research efforts to date by making the communication of research findings extremely difficult, to say the very least.

Fifth, once operational definitions have been established, we need to launch a vigorous effort to devise appropriate techniques to measuring them. Micheal summed up this problem extremely well when he stated that, "Welcome as major advances in statistical methodology may be, the critical need in educational and psychological testing is not for additional statistical sophistication, but rather for the formulation of a comprehensive and workable theory for the teaching and the learning process to which measurement and evaluation procedures can be meaningfully related."

From all of the information presently available, it would appear that, to a large measure, the future progress in the field of reading will be largely determined by the degree to which we are successful in the determination of appropriate solutions to these needs.

Dale E. Bennett

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A CONCEPT OF COMPREHENSION FOR TEACHERS

Richard Stevens
University of Notre Dame

My task today is to discuss with you my concept of reading comprehension.

I would like to clarify, from the beginning, that I bring no particular qualifications to this task beyond those that are possessed by any conscientious and thoughtful teacher of reading. Perhaps I should also tell you that before receiving training in reading my background was English Literature and for the last two years I have been one of the leaders in the Great Books seminar which every Arts and Letters Junior must take at the University of Notre Dame, where I teach. I give you my list of non-qualifications so that you will expect no more of me than I am capable of delivering--a few working thoughts.

Perhaps we might begin by asking, in good dialectic fashion, how does one form a concept of comprehension at all? I suppose there are various approaches. One might go to the existing pedagogical authorities in the field of reading and read their texts or listen to their speeches at meetings. Or one might go to the journals of research and consider what the current psychological models of reading happen to be. One might, for example, build a concept of comprehension on the gestalt theory, or on communication theory, or on the theory of operant conditioning. Or one might form a theory of comprehension based on the dozens of workbooks that claim to improve comprehension, written by professors of reading all over the country. All of these sources of building a concept of reading are interesting and I suppose productive for those who are searching. Ultimately, the concept one finds useful will depend on his background, his training, his experience as a teacher, and finally his temperament as a man. I suppose it is in concepts of comprehension as it is in so many other things, one is fated to choose a concept which is an image of himself. In the final analysis, one uses what he can and must.

At any rate, the route I take in conceiving comprehension is based less on what would be called professional reading and more on my experience of teaching reading at the college level. What I have to tell you today I have learned, if it can be called learning, from observation of the way students read, the way I read, and from discoveries of what I could teach that students could apply with results.

I would like to begin the delineation of my concept of comprehension by talking to you about two considerations I feel are fundamental. The first concerns the qualities of the materials read in college (or input as it is expressed in the language of technology). The second concerns the qualities of the intellectual response to these materials (or output). My first point will be that no concept of comprehension (and by extension, no concept of teaching comprehension) will be adequate which does not take into account, on the one hand, the extensive variations in the reading materials that go into our reader and, on the other, the various types of thought responses that are expected to come out of him by the college he attends. In this part of my talk I suppose I am trying to say that it is really not the job of the reading person to define comprehension in any terms short of the whole university enterprise in thoughtful literacy.

What do we learn when we consider the variety of materials which college students read? We learn that there is extensive variation in this material, extensive differences in subjects, styles, meanings, structures, methods, purposes, and whatever else you will. Consider for a moment the differences in material in the subjects of the usual college education: Literature; Philosophy; History; Social Science; Natural Science; Physical Science; Mathematics; and Theology. When we form our concept of comprehension, can we ignore the variation in methods, purposes, structures, and styles of presenting ideas in these different materials?

But the variations in material multiply when we consider the further differences in content within each subject. To take the subject of literature, for example, we can see that in the restricted area of narrative prose we have the short story, the novel and the autobiography. We have also the essay which is prose but not narrative. We have the drama which may be either tragic or comic. Finally we have the poetry, to mention only a few of the kinds of works that are classified as literary materials. Are all these works built of the same materials and with the same structures?

The situation is not much different in philosophy. In the same course a professor may assign: a text book written by himself, a dialogue by Plato, a poem by Lucretius, or a lengthy expository work, say by John Dewey. Is our concept of comprehension to ignore such differences in presentation?

In listing these variations of material, and the list could be extended throughout the full range of subjects in a university education, I make no effort at being exhaustive. I am only trying to point up some very real differences which I feel are often overlooked by those who teach reading courses and especially those who write or use comprehension workbooks. It is my belief that each of these materials must be read differently, that the process of comprehending them must also be adapted to the unique devices of presentation peculiar to each. Different questions must be asked by the reader and different processes of thought must be implemented in answering them.

I do not intend to go into all of this in detail. But to illustrate my point, let me suggest that you imagine the following situation. Suppose a student comes to you and asks: How do you read this kind of work? Suppose he asks this of each of the different kinds of works I have listed. If for any two materials in the list you would be prompted to give him different specific advice, then your background is adequate to establish the importance of variation in subject material for teaching reading comprehension.

The second type of variation which should influence our concept of comprehension concerns what students are expected to do after having read the different materials we have been talking about. I shall proceed by listing some of the behavioral outputs of reading that might be expected of one student by his various professors. Students may be asked to do the following as a response to their reading:

to interpret words, terms, images, symbols, happenings
to identify structures, organization, pattern
to understand general ideas, principles
to apply principles or manipulate data
to form critical principles
to remember material

Within each of these there is variation from course to course (of course). The 'same' behavior, the ability to apply principles, takes the following different forms as a student applies principles to what he reads in various courses:

in math he derives a mathematical proof
in chemistry he does an experiment
in physics he solves a number problem
in English he writes a critique of a story
in Philosophy he states a philosophical position
in History he does a piece of historical research

In my opinion, analysis of responses such as this suggests that widely differing thought responses are demanded of our students in the various reading they are assigned.

The list of different operations which students are expected to perform could be multiplied to whatever length one wishes, depending on how fine a categorization one prefers to make. Some of you, I imagine, would want a longer and much more elaborate list of reading outputs; others a shorter one. I offer mine only to illustrate the point that our concept of comprehension must be built upon the outputs that professors demand of their students and that these demands vary widely. When one considers that the outputs have to be appropriate to the inputs, or to say it another way, that reading responses must be framed in terms of the peculiarities of the material, we can see that comprehension cannot be conceived in any simple fashion. Teachers must develop concepts of comprehension and methods of improving it which go beyond the conventional workbook concept which ignores most differences in both material and in response.

Let us turn now from the matters of input and output to consider a third factor which bears on our concept of comprehension: the way we conceive the process of thought. For as long as I can remember the expression "Reading is Thinking" has been a commonplace. No one in the field of reading dares to question it. But when the materials published for the teaching of comprehension are evaluated, I am led to wonder what kind of thinking the sloganeers have in mind. It appears that almost any kind will do so long as it can be expressed in the form of a question with a keyed answer, copyrighted, printed on paper in workbooks or on cardboard cards packaged in boxes, or fed into a computer and displayed on a cathode ray tube. This is the age of mass education in which we have mass-produced questions raised by bored writers with little reference to the peculiarities of materials or the thought processes necessary to understand them. Both materials and questions are forced on apathetic readers who have no idea why such questions are worth asking and who are dispossessed of the right and title to ask and answer questions of their own. This is the age of the non-thought reading response. Thinking after reading is reduced to finding a letter to circle; to underlining answers; to writing one word fill-ins; to making marks on an IBM card; or to finding a button to push. The question asked is unapproachable; its terms are never defined; its purpose and function are as remote and unapproachable as the will of God in former times. And all this masquerades under the shibboleth "Reading is Thinking."

The fact that such materials are used to teach comprehension so universally leads me to question just what is to be the thinking that we want during our students' reading? Isn't the thinking that goes on during reading precisely what we are after as we search for a concept of comprehension? In my view it is, so let us try to define and clarify what kind of thinking is appropriate for good comprehension.

At this point a difficulty arises, for what we want to know--that is, how students think or should think while they read--is not easy to come by. For the thinking of a student, what goes on in his little black box, is not a phenomenon that can be observed. The best that anyone can do is to speculate or theorize on what may or should happen when thought occurs.

As I see it there are two speculations (or theories if that sounds better) of what we mean when we say "Reading is Thinking," that is of what goes on in the little black box when it reads.

The first notion of what thinking is during reading, in my opinion, reduces it to a category or pattern of stimulus response activity. The text is considered the stimulus which triggers off set responses in the readers' thoughts. This concept of comprehension views reading texts as repositories of recurring stimuli in a highly regular organization. There are organization stimuli which trigger off structural responses. There are purpose stimuli which trigger off knowledge of the author's purpose et cetera, et cetera. These stimuli are viewed as having relatively identical characteristics and relations in all the many types of reading which cause readers to recognize them as similar cues in the different materials read. This view holds that to teach reading comprehension, students must be trained to recognize the lexical, grammatical, syntactical, and rhetorical stimuli and to associate with them the appropriate lexical, grammatical and rhetorical responses. To teach students such responses all that teachers need are reading exercises, that is the college reading workbook.

The workbook consists of a number of articles on topics selected according to whim or fashion. Regardless of the reading material ten questions follow--generally of the same format though slightly modified to fit the article and the particular skill concept of the editor. The reader shall not ask any questions, he shall not even be encouraged to notice those which naturally arise in his mind. The reader will read and answer the questions, checking off the appropriate letter of the multiple choice response. Eventually the reader will read to answer such questions. What an achievement!

I do not claim to be an expert in stimulus-response theory, but I wonder what else is the basis of the reading workbook exercise? The whole business appears to me to be grounded on the notion that repeated working of reading exercises inevitably implants in the students' minds a standard pattern of questions and answers. In any case the teaching procedure is basically drill, learning by doing over and over with little reflection. It is not my business to dispute whatever learning in other fields is properly taught by such methods of drill--for example typing. What I do want to affirm today is that comprehension in my opinion is not one of them. I do not think that comprehension as it should occur in college reading is facilitated by the average workbook exercise. My reasons are the following.

My first objection to the workbook approach of "read this and answer the editor's questions" is based on the analysis of reading materials already made. I believe that college reading materials when properly scrutinized simply do not present identical paths through identical forests of identical trees to identical kinds of treasure. In other words, college reading materials vary too greatly in the signs of meaning, in the multifarious arrangements of meaning, and in the purposes for which they exist at all to fit the oversimplified model of a stimulus response situation, that is, one characterized by repetition of relatively identical elements. College reading materials as I study them are at least as various as they are similar.

My second objection to a stimulus response model for comprehension is that the widely varying responses expected of college readers have little or no relationship to the mechanical question-answer workbook ritual. When we consider the extremely ambiguous and confusing amalgam that sophisticated college reading materials present--it is not difficult to see that the manner of thinking while reading expected of college students by their professors bears almost no relation to the mental activity induced by workbook questions. The most glaring defect of the questions is that they are asked by someone else rather than the reader. A second defect is they are all too easily answered with little thought. If the workbook exercises work, it is to train readers to make relatively thoughtless stock responses to material they have not confronted at all. Workbook questions, in my opinion, do not suggest the way of thinking while reading or the why.

I would like now to present what is in my opinion a more adequate concept of thinking for reading comprehension, one which I think more properly fits the nature of the reading materials read and the kinds of mental processes readers must use. As I see it, the kind of thinking that should occur in reading is the kind Dewey defined in his concept of reflective thought. This is a kind of thinking that emphasizes the organism's need to define for itself its own problem and to create a unique structure of thought to solve it. To simplify a notion Dewey elaborated at some length, the problem of the person, as well as the reader, is to become aware of a difficulty, to learn enough about it to shape a problem, to gather evidence or data with which to solve it, and then to create a solution and verify it. The emphasis in all of this for Dewey was on creative thought as opposed to the remembered stock answer or rehearsed procedure. Dewey saw that the learning situation is one that requires the person to reconstruct reality rather than merely repeat established conceptions.

In my view it is so with reading. Reading selections rarely present, as I have said, the same path through the same trees to the same treasure. To rephrase Parmenides, one never steps into the same reading material twice. Each piece of reading material is a relatively complex amalgam of purpose, procedure, device and content assembled by a unique writer to embody reality as he perceives it. Such materials provide for readers opportunities for a reconstruction of what they consider to be reality. Reading will provide such an opportunity for them if they conceive of the act as a thoughtful one, rather than as a mere exercise. Our readers must be taught to conceive of reading as reflective thinking to solve problems--thinking, first, to solve the large personal problem of confronting reality and, secondly, thinking to solve the many reading problems that issue from this objective in given reading situations.

To put this in other words is to say that the role of comprehension in reading is to understand the author's meanings and structures in order to discover one's own mind on the matter at hand. But the interests, meanings, and structures, or lack of them with which the reader approaches an author's writing inevitably influence, confuse, or even prevent the reader from perceiving the author's message. The result is that the reader must learn to include his reading equipment or lack of it as part of the problem of understanding documents. In the process of hacking his way through the forest, he may find that he must frequently pause to sharpen his ax.

In any case the encounter with a new and sophisticated text begins in a state of bloomin buzzin confusion--a true Deweyan problem state. The reader who wishes to solve his reading problem must conceive it in terms other than doing what he did last time, since the new text and the present need are not like last time. The reader's only recourse is to initiate problem solving activity. Now how is this done?

Readers do this by creating hypotheses of meaning, structure, procedure and value as they proceed. Literally, the reader must create a strategy of what he must do with this document to get done what it and his needs dictate. The reader must hypothesise what kind of document it is, what its purposes and methods are, what kind of meaning its words have, which statements are truths and which are support, and finally, which statements indicate procedure and organization. And as the reader continues to read he must search for evidence which supports some hypotheses and rejects others. All the time he thinks in order to produce a clear and orderly perception of what he is reading, until at last he is able to reconstruct the material into the form which will satisfy the problem he posed for himself. It is reflective thought in a framework of inquiry of this kind which is what I conceive reading comprehension to be.

What readers who wish to improve their comprehension need to learn, then, is to think reflectively, to formulate a set of their own questions in a structure of inquiry created during the reading. They must learn to make of the act of comprehension a problem solving process that involves the creation of strategy, hypotheses, questions, search and verification. They must learn that it is their efforts of a reflective kind that introduce clarity, order and significance into the document they are seeking to understand. Readers must also learn that this thinking is done in order to achieve a highly personal result: an understanding of themselves and the world they live in. They must learn that comprehension is vital questioning that originates from the self, proceeds systematically through the reading of a document, and returns to the self with the payoff of greater awareness of what reality is all about.

We must teach readers that comprehension is this kind of reflective thinking, not the slavish, mechanical, and routine kind that workbooks suggest. It is thinking that is involved with questioning and answering but with the difference that it proceeds from a personally oriented, personally structured inquiry into what is, not a slavish answering of someone else's routine questions. We must teach them to think of reading in this way and to think during reading in this way in the highest and fullest sense.

That is the concept of comprehension I think we should have as college teachers of reading.

In a final paragraph I would like to suggest some guidelines for the implementation of these ideas. First, I think we must rid ourselves of the notion that comprehension is concerned only with the problems of cramming materials into our heads. Next, we must reject the idea that we teach thoughtful comprehension by workbook exercises. If we can get this far we are ready to build. We should then recognize that if we are to teach comprehension as reflective thinking on texts which vary in kind, we must recognize that we may have to teach our students something about this variation in the materials they read. To state it flatly, I suspect we must teach our students some rhetoric--that is, we must inform them about the way different texts are written, the way they utilize different devices, methods, and strategies to accomplish different ends. We must also teach them some dialectic--that is something about the manner in which truth is pursued, conceived and formulated. I say we as reading teachers must teach our students these matters and we must also educate them to a level at which they can utilize such ideas in the reflective thought process that is reading. Lastly, we must utilize classroom methods of reading and responding that go beyond the workbook exercise in which the editor-questioner does most of the thinking. In closing I would like to suggest three books which will provide more detailed suggestions: I. A. Richards, Interpretation in Teaching; Mortimer Adler, How to Read a Book; and Stella Carter, The Art of Reading.

THE HIDDEN LANGUAGE

John Brewer

In all of my career I have never been identified as a pure scholar. That is, I have never engaged myself in the problems of scholarly research and feedback. Nevertheless, I find I'm constantly probing and with increasing interest involving myself in areas which have been thought untouchable. The problem which I am going to discuss with you here I actually encountered twelve years ago--a point in my professional career when I was pleading the desperate plight of children coming from emotionally and socially infected homes long before the source of the infection had been revealed.

In this paper I am going to attempt the rendering of a particularly painful message. You may be repelled by what I have to say or you may accept the message; nevertheless, this is not a science-fiction story. I'm going to discuss what I call "the Hidden Language." The use of this term involves the special risk of stereotyping all children living in slum ghettos as possessing and utilizing this language. I would like it clear to the reader that when I say "these children," I mean some, not all, of the children living in deteriorated sections who come from homes employing the in-group lingo or "the Hidden Language" as the primary means of communication.

Realistically speaking it is important that we pay special attention to the "bumping" or colliding of two primary languages which has suddenly taken place in many schools and which has presented some bad problems for educators.

In some instances we encounter children whose primary language consists of various slang expressions foreign to the middle-class language used in the school. This "hidden language" is supplemented by a wealth of rhymes and verbal play going somewhat like this:

One day a teacher of mine came to me and said, "Mr. Brewer, these kids really think I'm rich. I heard one of them saying, 'You know Mr. Cummings, boy, he's really got it made--he pays four bucks for a haircut.'" I didn't want to shock Mr. Cummings, but finally I explained to him that in their lingo the kids meant he was "a square"--a dollar a side for the haircut.

Associated with this verbal play is a type of rhyming which some of you may wish to use on your Christmas cards. It goes like this:

Twas the day before Nicktide,
And all through the crib,
The hepcats were sparkling,
That righteous adlib.
The lay socks were stacked
By the smokestack, in fact,
It was an unhep bag
On old Santa's back.

This is the type of rhyme that goes on and on and on--

Outside of school these children function in a style different to that of the advantaged child who speaks appropriate English standardized in pronunciation. The disadvantaged child is basically non-verbal, using short, crisp non-dominated sentences. So, despite whatever intelligence they might possess, most of these students experience successive failure in school. In fact, most of them are reading two or more years below their grade level. Thus, by the time the child is ready to enter junior high after sixth grade he will be in worse shape than when he entered third grade.

John Brewer

The depth of their reading problem is so well hidden that even well-meaning teachers often miss the seriousness of the problem. The teacher is often looking into the child's world as an outsider and thereby sometimes cause more harm than they realize.

When I first encountered their problem I realized that it would be necessary to learn their language first-hand. I found their idiom to be as dazzling as a diamond--the spiraling idiomatic relationships distilled the pure flavor of the bittersweet--the valleys of anxiety and the peaks of joy. In order to master the "hipster's tongue" I began by employing these children as my teachers. But soon, I realized it was imperative that their parents had to be my tutors. As I moved out of the classroom into the mainstream of their street corner society, the "cats of the corners," in their lingo, became my consultants.

Mastering the hidden language had a very sobering effect upon me. What appeared originally to be a sparkling new language actually came to represent a metaphorical jail cell standing for separateness and hence exclusion and rejection. The rejection, I realized, led to activities to bolster self-esteem expressing itself by the usage of flashy, flamboyant and ultimately disparaging language. Used in the classroom the effect of their language becomes vindictive and abusive.

A very popular use of the hidden language is in the process of "operation japping" or teacher harrassment. Probably no other single factor affects teacher turnover in a difficult school as much as "operation japping." It can best be described in the picturesque descriptive language of those children having the capabilities of implementing it in the school setting. It goes something like this:

John Brewer

> "The spray tom-cat is ready to roll
> So he begins with a stinging hit and the
> sandbagging starts.
> Strange noises come out of nowhere; the
> tom-cat digs the tadpoles and it is now
> time for the chicken to become an eagle.
> And all the frogs and foxes better trilly
> along."

This is the rich verbal facility that these children bring to the school experience that we have never tapped or converted. "The spray tom-cat" is a 33rd degree little street expert, a master of all the skills of the jungle and his fair chunk of the ghetto. He is sly and he is ruthless. "Is ready to roll"--he is ready to make his move, so he "begins with a stinging hit"--that's the first attack--and "sandbagging starts" which means that things are thrown. "Strange noises come out of nowhere" --and children are unresponsive. "The tom-cat" who is now the leader, "digs," which means he informs, "all the tadpoles," which are his classmates, that "it is now time for the chicken to become an eagle." In other words, it is now time for the boss to become more aggressive. "And all the frogs and foxes," the boys and girls, "better trilly along," better join his group. "Because the scene has fallen on its belly"--it's too late for them to turn back. "The first step is to unzip Teach"--make the teacher back down--"so the tom-cat takes the long dive"--which means he openly defies the teacher. "He hopes she puts him in cold storage"--punishes him--"so he can dress her in red tresses"--insult her--"he and his been-teens"--his special friends--"get bolder and out flock"--which means outwit--"and scramble" --gang-up "on the teacher daily." "All the evening she is shot down with grief"--they play dirty tricks on her--"until she is ready for the big sleep"--which means for her to give in. "The bomb"--a special member of his gang-- "continues the heart-beat kick"--the fun--

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"for six nights straight"--every opportunity they have--"until they are sure she is frozen in a needle"--does not know what to do. "The tom-cat"--the leader--"now becomes the bull"--the supreme leader--"sc he decided to wing"--exploit--"the scene."

There is no doubt in my mind that literally thousands of teachers have left difficult schools because they couldn't communicate with the students. The teacher's inability to communicate often causes a desperate frustration which is released in contacts with the students. Often the student feels that his exclusion from the center of society gives him a license to create a separate world with a separate language enforced by idiomatic ambushes, neatly bobby-trapped with subtle jokes and strange language behavior. Many efforts have been made by seminars to discover the roots of the "hidden language" and thereby diagnose the extensiveness of the problem. This has been done mainly by going to the ghettos "where the action is" and studying the lingo first-hand. At this point, I would like to present some definite problems which the "hidden language" creates.

First, the term "hidden language" is misleading. To many children attending school their lingo is actually their primary language outside of the school setting. Many teachers, however, are unaware of this "hidden language." Hence, conventional English is used in the classroom and assumed by the teacher to be the norm for these students.

Second, this primary language has its roots planted in the family during the pre-school years of these children. As the children live beyond the family their language behavior takes on a new twist. They coin words to express a feeling, a thing, a body or a place. Often these children come from homes in which the mother never uses language to describe, direct, inform, discuss or even supervise. Therefore, these children out of sheer desperation develop their own remedies to become more sophisticated in the use of language and thereby communicate within their own social class structure. Strange idiomatic phrases are created to tie together a complete thought. Their language, in fact, is saturated with this type of verbal play.

As the children move into the context of the school setting the tug-of-war between the two primary languages begins. The teacher attempts to teach them conventional English which is complex in grammatical construction unaware of the bumping of the two languages. The students are introduced to symbolism of a high order and to a wide range of adjectives and adverbs. The student is overwhelmed. He suddenly finds himself faced with the choice between the complexity of their own verbal play and the frustration and anxieties of the demanding authority in the classroom to whom they cannot relate.

Teacher understanding is further blocked by the fact that the logic of the student's language is non-logic. For instance, "I am full of the joy of being up front" in the ghetto means "I'm just tired and disgusted with my circumstances." The appeal may be on the level of illusion and fantasy. For example, "It goes to the back of your head and pulls out beautiful things"--of hope and aspirations, this one moment of joy. This sort of language learned from their parents expresses the full flavor of the psychological and sociological impact of the occurrence of one crisis after another. In talking with the mothers I discovered that they had a very interesting way of chatting. I really wanted to understand their feelings toward school in order to build bridges instead of walls.

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In talking with the mothers the phrase "trees without roots" would very often come up in conversation. The phrase always intrigued me. Who would guess its meaning? --a broken home. The depth of comprehension on the part of these parents is really astounding. The range of their colorful phrases to express all aspects of life is quite amazing. For instance, they have the ghetto "by a dream" just a hope; or they see their poverty-stricken young baby as being "born without the light" or "the truth is in the know,"--it is not yet told; or sometimes if their little boy in the classroom describes his teacher, "Ooo...what a live one"--what a fool. If they have experienced some pain or loss they might say, "He grabbed himself a harp and a crown,"--he died.

"What a gas" was another phrase often used to express their feelings toward middle-class teachers. "What a gas"--you're just nauseating in the positions you take toward poor people! Sometimes the impoverished admit to being poor, but they just don't want to be stamped as being low class. Or "lighter than snow"--it's just a big lie. The spin-off from these expressions is truly amazing.

I wonder how many teachers realize that these children have a special way of talking about their classroom teachers? For example, when I used to talk to my kids who thought I was a real nice teach, they used to call me "my golden butterfly," "my luscious lollipop," "my special pinetop," "Little Eva," or "star apple snowed." Their language for a mean teacher is just as unique. "A head-shrinker," "Killer ape," "Bloody Mary," "swinging Tillie," or "the vulture" are all depreciatory terms. These are non-verbal children who are very presumptuous, and who can pretty well categorize the teacher. You can be sure that they have understood exactly how a teacher feels about them or their recognition of a well taught lesson--"easy each" or "heartbreak kicks."

What a wonderful thing it is for a little kid to come out of a classroom in first grade and hear him say, "Mister Brewer, it was easy each!" The teacher probably did something to move the children. Conversely they refer to a "poor lesson," or "the same hard path," "she cracked my skull," or "I was tucked in tight." They might refer to a strict teacher as "Clyde Beatty," "Smokey the Bear," "I was caged quiet," "my ball and chain," or "rifle hard," or "double edge." They do know a lot about their teachers and express their feelings vividly.

I think it's very relevant that sometimes they can get away with this name-calling. I am not the critic exposed to the frequent misinterpretations that occur in an average classroom. I remember a teacher who came rushing down to my office and said, "Mister Brewer, this is disgraceful, this is shocking." I said, "What's the matter?" She said, "I told this kid. He's bringing bugs into the building and jamming them in other kids' ears." I said, "Oh, we have to do something. Bring little June bug down and let's see if we can't find what this is all about." So June bug came into the office and we got to dialogin' and I said, "June Bug, why are you stretched so thin by joy"--which means why are you so sad. And he said, "Well, teacher stached me." And I said, "Well, don't put your head in the bowl and pull the chain" --which means don't give up. The problem turned out to be that the student was talking to one of the children in the class who wanted to pay attention so the disturbed child said to the teacher, "He keeps on bugging my ear."

There is another instance wherein a group of second grade children who were being disciplined were told by their teacher "not to come back to school this afternoon unless all of you bring a pencil and paper." As the kids were leaving the room some of them said, "I'm goin' bring a stick to school this afternoon." To which the teacher replied, "You better not. If you do I'm going to take you down to the office."

Consequently three or four kids show up that afternoon without a pencil. The teacher says, "Where's your pencil?" And one of them replies, "You said not bring one!"

"You call me a liar!" screams the teacher.

Thus it begins. What do you think these kids call a pencil? A stick! There are hundreds of stories like this. The language barriers and the many subtle forces that alienate the classroom teacher become a barrier to communication.

Far too many students are caught up in this sort of in-group language. In essence, this problem actually points the way to a fresh approach to teaching children whose primary language collides or bumps with the school's primary language. In the face of these difficulties, or perhaps because of them I decided to embark on one of my many special projects. My purpose was to prove that these children could experience teaching that conformed with the kind of language and related thinking which they had already started.

Now I would be the first to say that these children MUST--and let me say this as strong as I can--MUST acquire the facility to speak good, formal English. But the place to start is where the children are and provide the fundamental linkage so that they can understand that their language places them in a jail, in a separate world and does not provide the key for them to be assimilated into the main stream of our society. So, in essence if one looks for substance instead of smut and questionable language behavior, it is possible to have some of the positive features that lay below the crust of degradation and depravement explicit in the hidden language.

So with the chains of crisis burning on, I decided to review this distinctive language in some perspective--realistic, tough and practical.

In a slum ghetto, one of the most challenging and on-going experiences in which these children engage themselves is a process called "slipping," "capping," or "playing the dozens." It is an area which promotes high competitiveness. In itself it is degrading, but at least their motivation is high. "Capping" is a process which goes something like this: One child might say to another, "Your mommy wasn't born, she was trapped." "Your sisters are side-show bait" or "you ain't got no mommy or poppy." The feedback is "so's your mommy" or something similar. It's a game which they just love.

So I decided to convert this into something I called, "Operation Capping." I decided to make use of their rich verbal facility and plug it in where their voltage was high. I would assemble groups of four, five, six, seven, eight of these children and then introduce them to a well-known idiom such as "pad," "crib," "bunk" which they knew meant house. Then these children would have to cap each other, or top each other by introducing a formal word in its place. Thus the responses suddenly produced "house" and "home." The kids were very competitive in this capping game and resorted to practices toward which they had previously been indifferent. They had to win the capping game at all costs. The result was that they discovered for themselves the built-in disadvantages of their own idiomatic phrases. They discovered that their own language didn't go anywhere--that it didn't convey the meaning they were striving towards. For example, they were stumped when they tried to look up definitions for such idiomatic phrases as "toys on a fairy lake," "gold is my color," or "I'm on ice, man." For the first time they would go to a dictionary and come to a dead end. They began to express a real concern about their verbal deficit in their former language. The spin-off of all this was such that from these children over a period of ten years I collected over 5000 of these idioms and jargons. In fact there is not a word in textbook that I can't relate in the idiom.

The tangible results of this capping game soon became apparent. I would take a second grade boy who had the normal intelligence to read. However, he refused to read a book. The only thing he had that was important to him was a pocket knife. Thus I would take a pocket knife and say, "Let's talk about it." Then I would make use of all the words of the sight vocabulary of a second grade book. If he learned to tell me where--w-h-e-r-e--he got the pocket knife then "where" became relevant in his sight vocabulary. If he wanted to tell me when he bought it, then "when" became relevant. So in a real crude and imaginative way I used all of these sight words to enable him to write a story that he could read. These kids ran through a whole textbook in about six months.

Some of the other tangible results were that they became much less dependent on idiom to express themselves. They had a new purpose for reading and their reading improved significantly. There was a change in their value system and they had a new sense of identity. They used nouns, they used adjectives, they used adverbs, and they began to enjoy the parts of speech and to experience a lot of enjoyment wrestling with the complex phrases of our very complex language.

I want to close with a little poem. The first time I heard it I didn't know it meant me.

Blessings on thee, little boy
Barefoot boy with uncombed hair
My own tic-tock to thee I bear
I was once an unhep square.

ETHICAL PROBLEMS CONFRONTING THE COLLEGE-ADULT READING SPECIALIST

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As the field of reading emerges as a profession, it suffers the same growing pains and goes through the same developmental stages that professions always have. These stages include the development of professional organizations; specialized training programs; and the setting of standards which one must meet to practice the discipline. Another hallmark of a profession is the establishment and implementation of a code of ethics. It is interesting to note that although psychologists, a number of years ago, and counselors, more recently, have adopted ethical codes, most educational specialists are just beginning to talk about this problem. In fact, we have been out-distanced by many subprofessional groups and trade organizations who have ethical codes and standards--e.g., realtors, and travel agents, to name two. The underlying reason for developing an ethical code is not to enhance status of the members of the profession but rather to insure that the public to whom services are offered is protected from the unscrupulous, untrained practitioner.

What Progress Have We Made in the Reading Field?

In 1961, an International Reading Association committee under the chairmanship of Charles Letson drew up a recommended list of professional standards and a code of ethics applicable to reading specialists. (1) Although the statements were general and idealistic (e.g., it was recommended that reading specialists have a minimum of a master's degree in reading or equivalent), they did represent an attempt to describe professional standards and ethical principles in reading. This statement is still available from IRA but represents "desirable" practices rather than setting any restrictive or required prerequisites for membership in the organization.

Several years ago when I was president of the College Reading Association, we organized a Commission on Standards and Ethics whose function was to consider problems at the college-adult level and to review and recommend policy for membership requirements. This commission has discussed a number of specific complaints and made some general policy recommendations for the association.

In May, 1965, the IRA issued a resolution entitled "Buyer Be Wary" which warned the public about the extravagant advertising claims of commercial reading groups and publishers; and currently, I am working in a local reading group as chairman of a committee which is set up to implement this resolution regarding advertising.

With that as a background, I would like to discuss some of the problems facing college and adult reading specialists and what we might do toward improving the standards of the services that the public receives.

First of all, we in the reading area are in a particularly vulnerable position in our current society. The fact that higher education today more than ever before is inextricably linked with future life income and social success makes the ability to read well a most vital skill. Parents, brainwashed by those TV commercials which dolefully predict that college doors are closing, react desperately and look for anything that can assure their child a place in the wanted institution. (The irony of it all is that there are more college openings than ever before if only students would look around.) The search for a touchstone to open college doors brings us to a basic economic principle: When there is a need for a service and people are willing to pay for this service, sooner or later somebody will offer it and charge what the market will bear. With trained reading people in short supply, others without training have filled the gap and found commercial reading programs a lucrative field. (It has been reported that in some southwest communities, having your child in a rapid reading program has become the latest status symbol.)

The post-college adult, confronted with the information explosion or diarrhea of the press (whichever term you prefer) also finds he has a reading problem--keeping up with the new developments in his field, whatever his occupation. In industry, where human efficiency is essential to profits, efficiency in reading is an economic factor. The speed with which an executive processes the paperwork on his desk, or the rapidity with which new information is disseminated through the company staff is an important production cost. Industry has long been interested in speed reading training for these reasons, as have the government and military services. Teaching adults effective reading skills fills an important need, but too often untrained and psychologically unsophisticated people attracted by the promise of financial gains flock to set up adult programs. It takes little effort to whip up enthusiasm for rapid reading in a group of motivated adults who typically can show significant gains when merely told to read faster, but it would seem to me that the trained reading specialist concerned with improving employee reading efficiency would also have the responsibility to educate in a broader sense by applying research information on type-size, style, and legibility factors such as leading, readability, and vocabulary level, and describing their effects on reading rate and comprehension.

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In developmental reading, we have been cursed with a built-in sort of evaluative measure, which on the surface looks objective and scientific, but in reality is deceptive and often specious--that is, the measure of Words Per Minute (WPM). In adult reading, I have frequently been impressed by the naivety of the engineers and physical scientists who, seduced by the numerical simplicity of it all, have spent large sums of money for outrageous reading programs. One might raise the question at this point of whether there is anything unethical about programs which offer to improve speed of reading if this, indeed, is all the student or organization wants from the program. This might lead to some discussion, but the question of whether a reading program that guarantees to teach you to read at 5-10,000 WPM in its advertisements is ethical is another question. The IRA has taken a firm position that advertisements which guarantee results in reading are unethical. Unfortunately this stand has not reduced the number of advertisements carried by our newspapers for reading programs that make fantastic claims. The public, conditioned by the Good Housekeeping Seal of Approval-type advertising or Consumer's Report, accepts the reading guarantee as honest. Unfortunately, most people do not know that the editor of a newspaper is not required to enforce the ethics of other professions--as long as an ad is in good taste and there are not too many complaints, he is willing to take their money. The public somehow equates the daily newspaper with Consumer's Guide and feels that if it's advertised in the New York Times or the Chicago Tribune, it's above board! (If you write enough letters to the editor, you can get some of these ads toned down--now they cite their claim that the average students improve 3.8 times--the decimal making it sound like a "scientific" fact.)

It is my feeling that the lack of an enforceable code of ethics in advertising reflects on the well-trained reading specialist whether he be safely ensconced in an ivy-covered college reading laboratory or working commercially in his own program. However, my view is not shared by all reading personnel, so I'd like to present some illustrations of actual incidents which reflect the difficulties in getting reading specialists to agree to act and problems engendered by professional resistance to adopting and enforcing ethical codes.

Last fall, our university was invaded by a commercial organization which plastered the campus with ads guaranteeing to triple reading efficiency and promising that the gains would be permanent. They contracted for full-page ads in the campus newspaper, and although they were not permitted to hold meetings on campus, managed to arrange an organization meeting in the Catholic center. Upon investigation, I learned that this program was taught by a salesman who was a college flunk-out and had formerly worked for a public relations firm and a woman who claimed to have a college background, but who, when asked to file her experience in reading, submitted three typed pages describing the importance of reading in college and quoting liberally from an article by a Harvard psychologist.

Working through the student activities office, I managed to dissuade both the Catholic and Jewish student centers from renting this reading outfit space, but they found a motel near the campus in which to set up shop.

In the meantime, I learned that this same crew had been given over $60,000 to conduct a rapid reading program in a slum high school in a nearby city. I fired off a letter to the superintendent of schools indicating that I objected to my taxes being used to support such untrained personnel in reading, and objecting further to the fact that public school system was, in effect, endorsing a commercial program of dubious quality. Within two days, I received a letter from the reading organization's lawyer threatening to take me to court unless I stopped interfering with their contracts and referring specifically to my letter to the school superintendent.

The letter angered me, and I wrote more letters. I wrote to the school superintendent expressing my objections to the attempted intimidation, to the newspapers in an attempt to educate people about advertising in reading, and to many others. By working with the Maryland State Board of Education and the State's Attorneys office, we were able to get the group to stop teaching in Maryland, since we have a state law requiring that non-public courses must be approved by the State Board of Education. They were, in effect, operating illegally in our state.

In the meantime, victims of the program were beginning to drift into our program--students who had found that the techniques of reading books upside down as they had been directed to do in the super-speed reading course was playing havoc with their grades.

While I was gathering additional information on the group and the support of the local reading association, the commercial reading team strode into my dean of the faculty's office in an attempt to get me fired for writing the school superintendent and criticizing their program. (P.S., He didn't fire me.)

This does not exhaust the list of events that transpired but does give you a glimpse of the situation. The aftermath is also interesting, for when copies of my letters and the lawyer's threat were read to the board of the local reading association, they were aghast. Taking the threats literally and personally, they have since blocked every effort my committee has undertaken to deal directly with the problem of ethical practices, e.g., they will permit no statements to go out without their approval and want nothing done that will involve taking a definite stand on this issue. Even a recommendation that we alert the professional reading specialists to the importance of exercising careful judgment in permitting their names to be used as endorsements in commercial advertisements was voted down.

Charlatans in reading have it easy. A few threatening letters and a little direct pressure sends the professional educator scurrying under his desk (or even worse, pulling out his stamp of approval.)

Another result of the incident that is even more demoralizing is that despite all of the hew and cry, this same super-speed reading program with its exhorbitant claims and guarantees has, this fall, succeeded in getting into adult education programs in a number of our local counties. It looks as if the battle I waged to get them out of the area has backfired and has served only to augment their coffers.

What can the professional reading specialist do to combat such problems? The situation is not hopeless, but will take concerted effort. First of all, professional reading associations and their members have a responsibility to educate the general public concerning the realities of reading services. Our professional journals elucidate our own concerns about reading, but rarely does this same information reach the public. In our local reading organization, we have set up a speakers' bureau as an attempt to provide information about reading programs to parent and teachers' groups.

Another endeavor which is essential in assuming professional standing is the development and implementation of ethical standards. Using the

IRA Brochure as a start, our organization is attempting to collect examples of "ethical" and "unethical" advertising claims with plans to incorporate these into an ethical casebook which could be used in training future reading specialists and in clarifying ambiguities in present reading functions.

Thus, steps can be taken toward clarifying an ethical code for reading specialists and toward educating the public about what to expect from a reading program. In this way, many of the current abuses of reading services may eventually be brought under control with advantages accruing both to the reading profession and the general public.

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FOLLOW UP OF A STRATEGY

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A report on the state of reading appeared in The National Observer (5) about a year ago. The reporter's main topic was the differing views on speed reading and the use of machines. However, in assembling his material he discovered one area of agreement among the reading experts, and that was the procedure to preread or survey material, select what was relevant to the purpose, and raise questions for which one will read to find answers.

The program offered by the Reading and Study Skills Center of Indiana University emphasizes such a procedure and continues to use the modified SQ3R system called SQ4R by Smith et al in Learning to Learn (8).

I reported the use we make of the Flexibility Ratio score from the diagnostic test in Learning to Learn in order to identify students needing instruction in how to locate answers to questions. I then reported the strategy we had worked out for finding answers to questions (3).

The distinction was made between two kinds of first questions: one is, "What is in this article?" Such a question requires attention to the clues which permit a statement as to the content covered. It requires searching the entire range, then attending to whatever appears. We call this process "scanning."

In contrast, the question requiring an answer contained within relatively narrow limits of the content, and attention is directed to the clues which will locate the limits within which one can find the answer. We use the term "skimming" for the process whereby one starts with a question on content and locates the place where the answer is given. I emphasized that a distinction between locating these limits and comprehending content must be made explicit.

The strategy for finding answers was presented in this general form:

1. Select a key word from the question, that is, the sort of answer the question requires. (The interrogative is the cue for Step 1.)

2. Select a second word which will serve as a reference point for the correct location.

3. Identify what is going on in order to know when you are near the location if material is longer than a few paragraphs. In the case of short-length material, look for the key word and reference words.

4. When the location is found, read for comprehension of content.

5. Read just beyond to verify that all of the answer has been included, if more than a name or figure. (In practice this usually means noting the beginning words of the next sentence to be certain that no further information is given, as would be indicated by a "moreover" or a "however.")

In practice with our classes we found that the strategy worked satisfactorily. The key word and the reference word could be specified and what was going on in any particular section of content could be identified. Practice teachers who had not been a part of the development of these five steps could also use the system for instruction. However, we found that in the case of questions beyond the simple level of names or dates, that practice specifically directed to location was helpful. This took the form of naming the start and stop of the reading required to answer the question. Then all five steps could be applied to finding the answers to sets of practice questions.

A ready-made source of questions for practice by a class or by individual students is the student edition of Readers' Digest (7). In each issue two sets of exercises are presented to check comprehension: one is "Read Better--and Faster" for speed practice and the other is "Read--Think--Interpret" for thoughtful reading. By simply reversing the procedure, excellent practice for finding answers to questions is available and at two levels. If an easy level of practice is required, the student begins in the speed practice section. He reads the first question, finds the answer in the article, then reads the second question, and so on. The more difficult practice comes with the questions contained in the thoughtful reading section. Here questions may require searching for several locations in order to obtain the information required in order to decide upon the correct answer. The teacher's edition is available for the student to check his choice of answers.

Any set of comprehension questions can be used in this way. Brown's Efficient Reading (2) also has questions marked at two levels. SRA Reading Laboratories (9) have graded materials and the questions for both comprehension and rate builders can be used effectively in this backward fashion. There are, of course, practices designed for skimming, such as the three levels found in Glock (4).

Last year, in presenting the reasons for the need of a specific strategy for finding answers to questions, I complained that for many students current practice materials failed to offer sufficient directions on specifically "how to" but rather offered abundant practice with the directions saying, "Do this." The strategy of finding answers was presented as a "how to."

"But," the student says, "you know what questions to ask. When I'm on my own, I don't have the right questions."

The circumstances of the Indiana University reading and study program's changing from a formal, credit course organization to a completely individualized structure as of this past September lead us to decide to use our last classes in the way we felt most profitable for our over-all program.

The idea that was tried out as a follow-up to a strategy for finding answers to questions was the strategy for finding the right questions. And a "right" question is considered in the context of the late Wendell Johnson's discussion of questions and answers, to the effect that to find an answer to a question, the question must be in answerable form (6, p. 17). Furthermore, the question must be asked in such a way that the answers are satisfying, relaxing or adjustive. If a person can develop this ability to form the right questions, then he can take care of himself for all practical purposes.

Taking care of himself is another way of stating our goal in instructing a student in the techniques of independent study. To that end, the following strategy of how to ask the right questions is offered:

Although I have nothing but general praise for the approach taken in Learning to Learn, by some fortuitous happenstance no model questions are given for the heading "The Reception of Darwin's 'Missing Link,'" p. 25 of Lesson 3. Plus, the location is in the lower right outside corner which, apparently in my style of looking over students' work, always comes into view. Enough unconscious looking accumulated to penetrate my awareness that the same questions were raised by most students regardless of skill level; namely, "Who was Darwin?" and "What are the missing links?" They were missing the point of the heading that this particular section discussed the reception of Darwin's theory and that, since this is just one heading from several within the chapter or article, the discussion of the theory itself had probably already occurred.

The next source of evidence which accumulated was from the correspondence course which I conduct in techniques of reading and study. Learning to Learn is one of the required texts and I have adapted certain sections for special practice. One of these assignments is to make a set of cue notes on the article, "Proof of the Method," pp. 17-18. While this is an easy exercise if a student sees the point, several students were sending in notes dealing with the content of the method rather than the evidence that constitutes proof as required by the title, "Proof of the Method."

While the strategy can be stated so simply as to appear obvious, the evidence from student responses indicated that at least some students could not see the obvious. Nor from observation of teachers can all teachers state specifically to the unsuccessful student what exactly he should do in order to become successful in raising questions.

In using the titles and headings as the basis to form questions, these three steps are required:

1. Use the grammatical subject of the heading for the first and always necessary question of what is the point of the section.

2. Question the relationship of this grammatical subject with the preceding heading and with the title of the unit.

3. Ask questions regarding any other words in the heading according to:

   a. the reader's previous knowledge (if already known, don't ask), and
   b. extent of detail required by purpose of reading.

Look at the heading "The Reception of Darwin's Missing Links" and apply the strategy. The first question automatically becomes "What was the reception?" And if one is following Smith's lesson on questions, the depth question to be asked is "Why such a reception?" "What were the consequences of the reception?"

Since this heading is taken from a selection, one can assume that the questions students were raising, "Who was Darwin?" and "What were the missing links?", had been answered under previous headings, and Step 3 (that is, questioning other parts of the heading according to the reader's previous knowledge) would eliminate such questions about Darwin or missing links. In the case that these questions had not been answered in a preceding part of the same article, Step 3 still applies since students come to assigned reading with a variety of backgrounds, hence the instruction of raising questions only on the remaining items which are not already known.

The second part of Step 3 states that one should ask detailed questions according to the purpose of the assignment. In the case of the student who says he doesn't know what he's reading this for, except that the instructor assigned it, a few questions on the part of the reading teacher can direct the student's attention to remarks made by the instructor from which can be deduced what information the student must acquire.

In the example from "The Proof of the Method," the grammatical subject is "Proof," hence the study notes should indicate the evidence which supports the claims for success of the method. The remaining item in this title is "the Method." According to Step 3, questions directly applying to the procedure itself should only be asked if the reader does not already know the answers.

The follow-up of a strategy for finding answers is a strategy for raising questions. Although the strategy is simple, it represents a degree of specificity required by certain students.

If the two procedures are combined, the one for raising questions and the one for finding answers, then possibly the confusion for these students will be cleared. By having specific procedures to follow which permit individual flexibility, then one more step toward independent study skills will be achieved.

ADDENDUM: by Wm. David Smith, Reading and Study Skills Center, Indiana University.

Shortly after the above presentation was made data were gathered to test the effectiveness of the strategy. The report of the results follows:

To obtain a measure of the effect of using the strategy for raising questions, a set of headings and subheadings from a government text were duplicated and given to students in a Master's level Educational Psychology class.

The explanation was made that in reading improvement courses a standard procedure is to turn textbook headings into questions then read to find the answers to the questions. The class was then directed to turn the headings given to them into questions, writing their questions immediately below the headings.

The next step was to distribute copies of the strategy for raising questions and blue pencils.

The explanation was then made that some students had difficulty in forming questions and it was thought that this strategy might be helpful. The class then used the blue pencils to change or rewrite any of their original questions which did not follow the strategy.

The two sets of questions--original and with the strategy--were scored according to the following criteria:

Statements were scored on a three (3) point scale as follows:

3 points - if the subject of the statements was used to form the question.

2 points - if related information to the subject of the statements, but not the actual subject, was employed to form questions.

1 point - if neither subject of statements nor, related information to the subject, were employed to form questions

or

if questions raised from the statements were not in the same context as the statements.

Students' questions were divided into two groups designated by use or non-use of the strategy, as shown by questions written in blue pencil. Mean scores were obtained and tested as shown in the following table:

Mean scores were obtained and tested as shown in the following table:

TABLE 1

THE ORIGINAL AND FINAL MEAN SCORES OF THE TWO GROUPS--THOSE STUDENTS WHO USED THE STRATEGY TO MODIFY THEIR QUESTIONS AND THOSE STUDENTS WHO WERE NON-USERS OF THE STRATEGY TO MODIFY THEIR QUESTIONS

USE	Original Score				Final Score			
	$\overline{X}_1$	S	t	P	$\overline{X}_2$	S	t	P
	40.81	7.07	3.128	.01	46.31	13.56	1.55	N.S.
NON-USE	47.95	6.48			47.95	6.48		

Nancy B. Davis

INTERPRETATION

Results showed that the original scores of the two groups--those students who are assumed to have used the strategy and those students who are assumed not to have used the strategy were significantly different (.01 level).

When the mean scores of students who did use the strategy to modify their questions are compared with mean scores of students who did not need to modify their questions, the differences were not significant.

The difference shown by these results supports the original statement, "Although the strategy is simple, it represents a degree of specificity required by certain students." Similar data should be gathered using an undergraduate population.

Nancy B. Davis

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THE OPERATION OF A CAFETERIA COURSE

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Introduction: The Continuing Need

Any instructor worth his salt can prepare a reading list so long that his students cannot get through it. While some instructors may use their long list, others try to adjust it so that it contains enough to challenge the skillful students but not so much that it completely demoralizes the less skillful students. I would hazard the guess that the reading abilities of students in an institution could be accurately predicted from the average length of reading lists assigned in the institution; the better students are, the more instructors can assign.

Instructors' ability to adjust their reading lists is a great boon to those of us who operate university-based reading services. No matter how good the reading skills of the student body, the faculty can compensate for it by contriving horrendous reading assignments and by providing a continuing need for reading improvement services.

If these speculations are accurate, one must conclude that a college or university based service operates on a treadmill. Its mission is to improve reading skills of students so that they can deal with their reading load. If reading skills are improved, the reading load will increase.

Fortunately for the individual student, the hypothesized lengthening of reading lists would occur gradually; improving his reading would improve his position relative to his reading list. The reading service, on the other hand, must continue to improve its effectiveness in order to maintain its relative position; it must run in order to stay in the same place.

This paper presents an attempt to deal with the problems faced at the University of Michigan by students and by the Reading Improvement Service itself. I will first present the status of our current solution, outline some of the situational constraints influencing the solution, discuss relationships between constraints and current operation, and finally, discuss some possibilities for the future.

The Current Status: The Cafeteria Course

The course which forms the basis for innovation has been dubbed a "cafeteria course" because its operation resembles that of a cafeteria. Students come and go as they wish, and stop coming whenever they wish. The items available range from materials which feature plans teaching them how to summarize reading assignments quickly to programs which teach them how to increase the elegance of their writing style.

Within limits, students set their own goals and their own schedule. The limits on scheduling are imposed by the other demands on their time and the hours during which the Reading Service is open. The limits on goals are determined by other demands, by the ability of the Service to provide assistance, and by limiting the assistance to improving academic skills.

Students enter the course either after one or more interviews with staff members or after completing a reading course which meets two hours per week for three weeks. Thus a student can take the reading course (which concentrates on improving reading rate while maintaining comprehension), the cafeteria course (which concentrates on a wide variety of specific skills useful to students), or he can request an individual academic skills program (which attempts to deal with any academic problem not dealt with in the courses). The major difference between the operation of the cafeteria course and the operation of the familiar laboratory course lies in the amount of influence the students have over its operation. Students determine goals, content, sequence, duration, and even the details of the teaching materials used in the cafeteria course. In a laboratory course, one can require certain things of students; in a cafeteria course, one does not require things of students but instead tries to provide things that they require. In most laboratory courses, the course content dictates the design and operation of the course; in a cafeteria course the students dictate the design and operation. If they do not find our offerings desirable, we must modify them or go out of business. On the other hand, they do not plan the menu or tell us how to prepare the materials; they exercise their influence by techniques available to consumers.

The Situational Constraints: The Reading Improvement Service

The constraints which dictated the design features of the cafeteria course are specific but not necessarily unique to our situation. Our services are free to students except for a small materials fee for the reading course. Courses are non-credit and usually elected in addition to a normal course load.

The Reading Service has, in the past, offered only the reading improvement course to University students. About 80% of the students who attended were in their first term at the university; 60-70% were freshmen or transfer students, and the remainder of the 80% were first year graduate students. As a result of this first term demand, more students requested the course than we could accommodate during the fall term and fewer requested it than we could accommodate during the winter term.

The variation in demand was out of phase with staffing capability. The reading course was taught by graduate students working part time at the Service. There were always new instructors in the fall so that staffing capability was lowest when demand was highest.

We also try to lose our instructors as rapidly as possible. They are graduate students working on advanced degrees so we do not have the option of attempting to retain good instructors. We must find some other way of improving instruction, of sustaining the improvement, and of providing for continuity and uniform quality of service.

Improving the quality of service leads to problems through the apparently causal correlation between quality and demand. As quality improves, the demand for services tends to increase. Handling increased demand leads to increased costs. What we would like to spend has a way of outrunning what we can budget. We need, therefore, to find ways of increasing productivity so that we can hold down costs while improving quantity and quality of services.

Another problem which is not unique to our situation is that students are becoming more and more sophisticated. What was new to them yesterday is now yesterday's news. Many of them are now taught in high school some of the things we used to teach at the university. If they learned something and profited from it, they don't need it. If they learned about it and didn't profit from it, they are not enthusiastic about having someone teach it again.

It does not seem wise in a service geared to students to try to treat reading as if it were not related to study. That leaves the problem of how to combine reading and study in our instruction. We have learned from experience that if we offer courses called "Study Skills" or "Learning Skills" or similar names, very few students attend them. If we offer reading courses which concentrate on improving rate while maintaining or improving comprehension, students drop out. Even if they improve their rate on different types of material, achieving a degree of flexibility, we hear all too often the comment, "They taught me to read faster but that didn't help much." Thus, if we name it "Study" they don't come. If we don't teach "study," they drop. Study by another name is apparently better.

Another constraint is that our one small classroom is located more than a 10 minute walk from any classroom. Students who do not have bicycles, or who are unwilling to ride them through Michigan ice and snow, have difficulty scheduling our classes. While we could use other classrooms "on campus," it poses scheduling problems for us as well as problems in transporting materials and equipment; we haven't been able to overcome the problems well enough to be able to do it successfully. The effect of the constraint is to limit our reading class productivity to 20 students per hour. On the other hand, the inconvenient location would seem to assure "motivated" students.

Constraints and Current Operations: Relationships

The pattern of demand for services, the constraints upon the Reading Service, and the kinds of services of use to students have guided the design of the Cafeteria Course and the design of its relationships with reading classes and academic counseling. Since the bulk of the demand is for fall term reading classes, we scheduled 28 of them, accommodating 560 students. The schedule was arranged so that a student could attend a reading class for three weeks and then attend the Cafeteria Course for another three weeks during the same time slot.

Seven reading classes began the first week of the term, seven began the fourth week, seven began the seventh week, and seven began the tenth week. Thus, the first three weeks of the term, all reading classes could be taught by experienced staff members while new staff members observed and prepared to begin teaching the fourth week.

Students who could not attend reading classes due to scheduling problems could elect to work out an individual scheduled reading improvement program and enter the Cafeteria Course or else they could elect to wait for a reading class in the second term. About 50 elected to wait and about the same number elected the individual counseling route.

We had, in other years, run two sets of classes each term. These classes continued for 6½ weeks and began during the first and eighth weeks of the term. Besides, we had observed, as have you, that students often make the major portion of their reading gains during the first three weeks of a six and one half week course.

Geerlofs (1) reports a survey of 140 reading centers in 40 states. The shortest course duration reported by any of the 90 centers responding was 10 hours, the longest 100 hours and the mean 25 hours. Our 13 hours was relatively short and the 6 hour course would represent a new low in duration. We were naturally concerned lest it also represent a new low in quality.

The relevant control measure we have used since 1952 is average percent gain in the rate of comprehension score from Part I of the Diagnostic Reading Test. The statistics for the fall terms of 1964, 1965, 1966, 1967 were 92%, 84%, 86% and 65% respectively, the latter score representing the three week course.

Whether or not the lower score is educationally significant is uncertain at this point. It is comparable to the average gains during the years when the follow-up study by Smith and Wood (2) showed that students who had taken a reading course had higher grade point averages and that fewer dropped out of school than similar students who did not take a reading course. However, both the composition of the student body and the content of the reading courses were somewhat different then than they are now.

Of the five instructors who taught during the fall of 1966 and 1967, one had significantly lower gains in the three week courses taught in 1967 than in six and one-half week courses taught in 1966. Two had slightly larger and two had slightly smaller gains in the three week courses. Gains in classes taught by "new" instructors were somewhat lower than those taught by "new" instructors in the six and one half week courses taught in the fall of 1966. Thus the evidence is not adequate to conclude that there is a causal relationship between the shorter classes and lower gains; however, it seems a reasonable guess.

The percentage of students who entered the Cafeteria Course after completion of the reading course is probably lower than is desirable: approximately 20%. Further experience and follow-up information are needed before we know how many would actually find continuation worthwhile.

Since the demand for the Cafeteria Course was relatively low we had too much staff time scheduled for it. This made it easier for us to handle students who walked in in search of academic help, but we probably missed many students who would have benefited from continuing. For example, some rather sophisticated students (i.e., students who had had "study help" elsewhere) expressed disbelief that the items in the Cafeteria Course could actually teach anyone how to get better grades, spend less time, etc. Students who expressed enthusiasm for attending the Cafeteria Course were occasionally squelched by their peers. As we obtain more experience with the Cafeteria Course, our claims can be made more believable by use of supporting data. Now all we can claim is that the procedure taught by the items have worked consistently with students whom we have seen individually.

The Future Possibilities:
A Living System

The outlook for the future is bright in part because the Cafeteria Course seems to be helping solve problems and in part because there is so much improvement to be made. The course can help to improve flexibility and productivity of the Reading Improvement Service and can help to improve the quality and reliability of services.

Flexibility and Productivity

It will be possible to schedule more reading classes early in the fall to accommodate more students and to avoid operating reading classes right up to the final examination period. We had scheduled equal amounts of time for reading classes and the cafeteria course. Since only about 20% (mostly upperclassmen) attended the cafeteria course after the reading course was completed, it would be possible to start the fall with relatively few hours scheduled for the cafeteria course and increase them while, at the same time, decreasing the number of hours scheduled for reading classes. The greater flexibility makes it easier to adapt to demand. We will be able to accommodate even more students without increasing the amount of staff time required.

Once materials are developed to the point where they work within the Cafeteria Course they can be used in other ways as well. For example, they can be a) placed in dormitory libraries and university libraries, b) distributed by instructors of regular university classes, or c) distributed and used by academic advisors, resident advisors in dormitories or fraternities and sororities, etc.

Some steps have already been taken. Some materials have been used in dormitory libraries and distributed by instructors in classes in psychology, in education, and in social work. Students who use them can consult with their instructors or come to the Cafeteria Course to work on special problems.

It is encouraging to have instructors find our materials useful. It seems reasonable that those of us in the business of helping students learn should find a common ground with those in the business of teaching. One of our major problems in teaching reading is to teach students how to separate trivial material from important material. Instructors can be of tremendous assistance to us and to their students by providing feedback regarding student success in learning important material from reading assignments. If instructors can provide the feedback in conjunction with our exercises (which are carried out using the students' actual reading assignments), we can all benefit. The possibilities are immense.

Dale M. Brethower

The operation of the Cafeteria Course makes it possible for us to accommodate more students at the Reading Service. It makes it possible to disseminate materials to reach students who do not come to the Reading Service. It provides a vehicle for articulating our efforts with those of other counseling agencies and with those of instructors. Flexibility has clearly increased and productivity seems to be following suit.

Quality and Reliability

One effect of adding the Cafeteria Course and shortening the reading courses has been to put greater pressure on reading instructors to plan carefully. The more careful planning will probably not only facilitate intra-staff communication but also make it easier to understand the more carefully worked out lesson plans. One can rely on less efficient exercises and less efficient conduct of class if there are six or more weeks and twelve or more class hours.

The frequent staff changes resulting from use of graduate students as instructors presents serious problems in maintaining the quality and the reliability of service. Every time a staff member leaves (or moves to another assignment), we lose the benefit of the skill he has acquired. However, with the Cafeteria Course in operation, staff members are encouraged to write down the procedures they use for special problems and to develop the procedures as exercises and self-instructional items. The items can then be used by other staff members and developed further, even if the person who originated the item departs.

During the winter term when demand for courses has lessened, staff members use the time to good advantage. They write and revise items for the Cafeteria Course. Productivity in the fall can properly be measured in terms of the students seen whereas productivity at less demanding times can be measured in terms of the number of items generated, added to, and improved. The items can then be used to further improve the quality of the service. They remain after the staff moves on.

Evaluation of the quality of the Cafeteria Course presents interesting problems in that different students select different items, come for varying amounts of time, etc. The quality of the course as a whole must be evaluated separately from the quality of any of the parts, i.e., the individual items. The whole must be evaluated and each part must be evaluated in a setting where the whole is clearly not the sum of its parts. For a student who selects one item, that one item (plus the mechanics of coming to the course, etc.) is the whole. For another student who selects one different item, that one item is the whole and its "part" is totally different than that of the other student. In general, any part or any possible combination of parts constitutes the whole. Thus, when we try to evaluate the course as a whole, we are forced to choose which one of the possible combinations to evaluate. Our choice is: "Any combination comprised of at least one item." Thus, if a student completes no items, he is a drop out; but once he completes one, he has completed the course whenever he stops. He is considered a graduate. The course's success is measured, in large part, on how useful it is to graduates. Since different students can use different things, the design of the course helps them to select what they can use without spending time on things they cannot.

The general objective against which the course is evaluated is helping students make use of their academic opportunities. A general way of evaluating the course as a whole is in terms of grade point averages and percentages of students remaining in school. However, individual students can have individual goals ranging from improving their grades to decreasing the amount of nonproductive worrying about particular examinations or assignments.

It is in conjunction with such individual goals that the evaluation of the Cafeteria Course as a whole coincides with the evaluation of parts of the course. If a student's individual goals are met, the course is a success, at least to the extent that it contributes to achieving the goals and to the extent that the goals are appropriate. The contribution of individual items to goal achievement is part of the evaluation or validation of the items. If a student has one goal and achieves it with the help of one item, both the course and the item are shown to be valuable. If a student has several goals and achieves them with the help of several items, both the course and the items are shown to be valuable.

In the past, exercises have been selected by staff members, presumably on the basis of whether or not the exercises and the staff member worked well together. A good staff member could compensate for deficiencies in the exercises but, when that staff member left, so frequently did the effectiveness of the exercise. Now that students are selecting items, the items must be developed to carry their own weight. Their useful life is greater than the duration of a particular staff member's stay.

The course is viewed as a living system. We are evaluating it in terms of what it does and how well it grows. As it grows, its parts will change. New items will be added, items will be revised, and items will be removed when they are not needed. It has a life and character of its own. It can be shaped by the staff and the direction of its growth modified by them but exists apart from them. Now, items die when students do not select them rather than when particular staff members leave.

As it grows it has the potential to meet the needs of more students. It has the potential to become more efficient and more effective. The potential can be achieved without substantial increases in cost; perhaps it can be achieved at lower cost. The potential can be achieved without requiring the staff to work harder. We must, however, work smarter as we teach students to work smarter and perform better.

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EFFECTIVENESS OF FOUR METHODS OF INCREASING READING RATE, COMPREHENSION, AND FLEXIBILITY--A SUMMARY*

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The study entitled "Effectiveness of Four Methods of Increasing Reading Rate, Comprehension, and Flexibility" received honorable mention by the International Reading Association as an Outstanding Dissertation in the Field of Reading during 1965-66. Acknowledgment is made to the steady guidance given by Drs. Leonard S. Braam, Margaret J. Early, and David A. Payne, all of Syracuse University.

Involved in the study were 255 freshmen at Syracuse University. Of these, 179 received instruction in reading efficiency through one of four methods (e.g., tachistoscopic, controlled reader, controlled pacing, and paperback scanning). Data, presented in Table 1, indicated that all four methods produced gains in rate at the .01 level of significance, the paperback scanning method being significantly superior to any of the other methods.

No significant change occurred in the average level of comprehension. Reading flexibility increased significantly with three of the four methods (the tachistoscopic method produced gains in flexibility at a less conservative level). Eight weeks following completion of instruction gains in rate appeared to have been maintained.

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*This paper reports research performed pursuant to a contract with the U.S. Department of Health, Education, and Welfare, Office of Education. The research was also supported in part by the National Science Foundation under Grant GP-1137.

TABLE 1

Related t Tests For Pre And Post Mean Scores (± SD) In Rate

Test	Group	N	Pre-test	Post-test	Diff.	t
Van Wagenen	Paperback	43	205±41.1	264± 55.7	59	9.00
	C. Pacing	44	203±34.7	230± 45.1	27	4.17
	C. Reader	42	194±39.3	226± 57.6	32	5.51
	Tachistoscopic	45	216±48.4	241± 43.9	25	3.23
	Control	48	231±87.8	232± 90.2	1	0.22
Robinson-Hall	Paperback	43	235±47.9	389±249.7	154	4.39
	C. Pacing	45	231±54.0	332± 98.1	101	7.36
	C. Reader	43	213±58.7	288± 76.9	75	8.84
	Tachistoscopic	46	225±52.5	294± 99.6	69	6.70
	Control	45	244±53.3	300±103.6	56	4.66

Allen Berger

Criterion measures were the Van Wagenen Rate of Comprehension Test, the Robinson-Hall Reading Test of History, and the Braam-Sheldon Flexibility of Reading Test.

Because of interest in the study, facets were described at various times and places. A record here is now made indicating the sources from which facets of this study may be obtained.

1. The final report was submitted to the U.S. Office of Education. The research was done under CRP No. OEC-1-6-068187-0845.

2. The dissertation is available in microfilm from University Microfilms (300 North Zeeb Road, P.O. Box 1346, Ann Arbor, Michigan 48106). Order number: 67-7104.

3. An abstract of the dissertation is on page 4160-A of Dissertation Abstracts.

4. A detailed account of the research, including tabled data, has been filed as Document No. 9470 with the American Documentation Institute, Auxiliary Publications Project, Photoduplication Service, Library of Congress, Washington, D.C. 20540.

5. A three-page article appeared in the June issue of Perceptual and Motor Skills, 1967, 24, 948-50.

6. A longer article co-authored with Dr. Leonard S. Braam appeared in the Journal of Reading, XI, 5, February, 1968.

7. An approximate 4,000-word article containing considerable data and tables appeared in the Proceedings of the Twelfth Annual Convention of the International Reading Association.

8. Upon the invitation of the editors of Perceptual and Motor Skills, a re-analysis of

the data was made to ascertain what occurred to individuals within each of the four methods of instruction. That is, even though the paperback scanning method was significantly superior to the other methods in regard to rate, did _all_ the students involved with that method take increases in rate? The re-examination is scheduled to appear in _Perceptual and Motor Skills_.

9. Preparation is now being made to conduct a study of the retention of gains following a lapse of three years. The population sample of 255 freshmen at Syracuse is in the class of students scheduled to graduate in 1969.

Four other sources--one relating to one of the methods of instruction and the other three involving related studies--deserve mention:

10. The paperback scanning method is described in "Increasing Reading Rate with Paperbacks," _Reading Improvement_, IV, 3, 1967. (P.O. Box 125, Oshkosh, Wisconsin 54901)

11. The essence of Chapter 2 of the dissertation appears as "Selected Review of Studies on the Effectiveness of Various Methods of Increasing Reading Efficiency," _Journal of the Reading Specialist_, VI, 2, December, 1966. Other sources include:

12. "Ten Important Sources of Information on Speed Reading," _Journal of Reading_, XI, 5, February, 1968. The article was written in conjunction with the following bibliography:

13. _Speed Reading--An Annotated Bibliography_, published by the International Reading Association. Contains references to one hundred studies in the following categories: tachistoscopic and controlled pacing, paperback scanning, retention of gains, flexibility, perception, processing information, sex differences, and measurement. Approximately thirty-five journals

and other publications are represented.

EDITOR'S NOTE

It is a general policy of many professional organizations to refrain from publishing papers available in other journals. The policy is adhered to in an attempt to avoid redundant publication. Program chairmen, however, will frequently schedule worthwhile presentation even though the report has been given orally at previous meetings. In that way a paper may be given wide exposure, without clogging the journals. Such is the case of the article by Dr. Berger.

Dr. Berger's findings have been presented, orally and in writing, on several previous occasions. At my request, Dr. Berger prepared, rather than his formal speech, a summary of findings and a complete list of citations for the study. Dr. Berger is due our thanks for his understanding and cooperation.

D.M.W.

SOME INFLUENCES OF "SPEED SET" ON RATE OF COMPREHENSION DURING TESTING

Dale M. Brethower
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A measure used to help determine the effectiveness of reading improvement classes at the Reading Improvement Service of the University of Michigan and of many other classes across the nation is the rate of comprehension score from the Diagnostic Reading Test (1).

Pre- and post-test scores on alternate forms of the test are obtained and gains are interpreted as indicators of reading improvement (2). Such an interpretation rests upon the assumption that the pre- and post-tests are administered in the same way and under similar conditions. At the Reading Improvement Service they are administered to the same students in the same classroom by the same person. However, from the student's point of view, the pre-test is administered in strange surroundings, among strangers, by a stranger. The post-test is administered in familiar surroundings, among acquaintances, by a familiar instructor.

This line of thinking led us to wonder what things influence gains in the rate of comprehension score other than what we would like to think of as gains in the rate of comprehension.

Procedures: Experiment 1

Subjects were 100 University of Michigan students who voluntarily enrolled in one of six non-credit reading improvement classes which met two hours per week for 6½ weeks. The majority were freshmen, followed in number by graduate students, sophomores, juniors, and seniors, respectively.

One group comprised three classes taught by different instructors. All were pre-tested using Part 1 of the *Diagnostic Reading Test*. The 12 students in one class were tested using Form A of the test. The other 34 students were tested using Form B.

The second group comprised three classes taught by different instructors, one of whom also taught one class in the first group. The 16 students in one class were tested with Form A and the other 38 with Form B.

The students were pre-tested using the following instructions instead of those on page three of the DRT booklet:

DRT Part 1 Speed Set

Directions: Write your name, the date, and section number on the answer sheet. This is a test of reading skill. To start the test everyone will read together the lines at the bottom of page 3. I will read orally and you should follow, reading silently. When we come to the last word on the page, I will stop, and you will simply turn the page and keep right on reading. Read the next 4 pages very quickly. At the end of *one minute* I will say '*Stop.*' When I say 'Stop,' turn to the comprehension questions and answer them by making X's over the appropriate numbers on the answer sheet.

Note to Instructors:

(In answer to the question, "What if we don't finish?" say "If you can't read it all in one minute, just try to read the most important parts to get all the information you can during the minute.") (If they don't ask this or a similar question, you should give them the answer anyway.)

They were then retested with another form of the test administered in the usual manner.

Results: Experiment 1

The rate of comprehension scores taken from the tests which were administered in the usual manner were compared for the two groups. The average rate of comprehension score for the group which had just taken the test under the artificial time constraint was 266. The average rate of comprehension score for the other group was 236, a difference of 29 ($t = 1.79;\ p < .05$).

One instructor was common to the two groups. One of his classes had the artificial test first ($n = 16$) and had an average rate of comprehension score of 260. His other class had an average rate of comprehension score of 189, a difference of 71 ($t = 2.9;\ p < .01$).

Discussion: Experiment 1

Administering a test under a time constraint (which would require reading at approximately 1700 words per minute to complete reading the selection) and then administering the test according to the usual directions results in a significantly higher than normal rate of comprehension score.

At the Reading Improvement Service we ordinarily administer a pre-test, approximately 10 hours of reading instruction, which frequently involves reading under time constraints, followed by a post-test. The average % R · C gain for 600 students was 85% for the year in which the experiment was conducted. The "% R · C gain" $\left(\frac{266-236}{236} \text{ X } 100\right)$ produced artificially was 12%. Other factors are required to account for most of the % R · C gains shown in the reading classes.

Dale M. Brethower

Procedure: Experiment 2

Subjects were 24 students enrolled in a graduate course for training reading specialists. (Practicum: Diagnosis and Treatment of Reading Problems). They were in a reading improvement class as one of the course requirements. The majority were elementary and secondary school teachers doing summer work toward an advanced degree in education.

Form A of the Diagnostic Reading Test was administered as a pre-test. Then the instructor administered Form B, with these directions:

> "The test you have in front of you is an alternative form of the test you just took. The directions are the same except that you will have only three minutes to read the selection. At the end of three minutes I will say 'Stop.' When I say, 'Stop,' stop reading and answer the comprehension questions at the end. If you finish in less than three minutes, record your time and go on to answer the questions just as you did before. Are there any questions?"

Results: Experiment 2

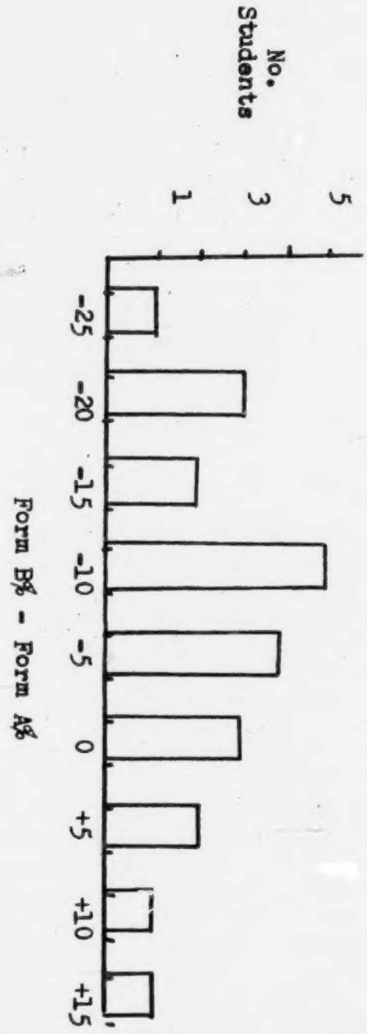
The time constraint established a reading rate of 412 words per minute. (Data from the two students who read faster than that on the first test were not analyzed.)

The R · C scores of each of the remaining 22 subjects increased for the test taken under the time constraint. The average R · C was 326, which was higher by 82 than the average R · C of 244 obtained from the results of the first test.

The average comprehension score on the first test was 82%, slightly higher than the average

FIGURE 1

COMPREHENSION CHANGES
UNDER TIME CONSTRAINT



of 76% obtained under the time constraint. Fig. 1 is a frequency distribution of changes in comprehension from the first to the second test.

The comprehension score of 50% of the students dropped 10% or more. The average R · C score for these students was 244 for the regular test, 281 for the test given under time constraint, and 431 for the post-test given at the end of the course.

The comprehension score of 50% of the students dropped 5%, not at all, or increased. The average R · C score for these students was 263 for the regular test, 370 for the test given under time constraint, and 363 for the post-test at the end of the course.

Discussion: Experiment 2

The apparent R · C gain (pre-test to pre-test under time constraint) for the entire class was 34%. The average R · C score after 10 hours of instruction was 397, a gain of 63%. However, the test given under time constraint seems to be a reasonable measure of reading skills of 50% of the class, since comprehension dropped only slightly (4 students), stayed the same (3 students), or increased (4 students). If this pre-test is used as a baseline, these students showed no gain on the post-test. If the regular pre-test is taken as the baseline they showed a 40% R · C gain. The other 50% of the students showed a gain of 77% if the regular pre-test is used as a baseline, and a gain of 61% if the time constraint pre-test is used as a baseline.

Procedures: Experiment 3 (3)

Subjects were 34 students taking reading improvement courses. Thirteen were in a class at the Reading Improvement Service. Twenty-one were in a class at Jackson, Michigan offered by the Adult Education Department of the Jackson Public Schools.

Students were pre-tested with Form A of the Diagnostic Reading Test. At the last class meeting Form B was administered as a post-test. Following the post-test, Form D was administered. The students were told to read it "just the way you've been reading the timed exercises in class."

Results: Experiment 3

An average % R · C gain for Part 1 of the test was computed by averaging the % R · C gains from Form A to Form B made by each student. The average R · C gain was 93%. The statistic was computed again for the gain from Form A to Form D. The average gain using the test taken under instructions to read the way they'd been reading class exercises was 131%. 28 students had their highest R · C scores with Form D, 5 with Form B, and one had the same R · C score with Forms B and D.

Discussion: Experiment 3

Instructors frequently report that students read more slowly while they are taking the test than while reading class exercises of equal or greater difficulty. The results of Experiment 3 suggest an interpretation of this difference in reading in terms of differences in the instructions given to the students. When given the test instructions to read as rapidly as they can and still understand, they read in one way. When instructed to read the way they've been reading class exercises, their reading is influenced by instructions they've been given for class exercises. In courses taught by members of the Reading Service staff these instructions say, at one time or another, in one way or another during the course, "Read very rapidly--don't be too concerned with comprehension. It will be all right."

Another interpretation of the result is that the students are more "anxious" and therefore less competent while taking the real test. One would have to argue that even though they aren't told that results of the second test are experimental and confidential, etc., they somehow know it and are less anxious. While this latter interpretation is sometimes appealing, at first, it seems a bit tenuous in this case.

Discussion of Experiments 1, 2, and 3

The results of the three experiments illustrate once again that the conditions under which tests are administered influence test results. Changes in instructions influence results, as do the conditions immediately prior to taking the test.

Experiment #1 showed an apparent average R • C gain of 12% as a result of having a test under time constraint just prior to taking the regular pre-test. No control experiment was run to see whether the result was due to the test plus time constraint. The test alone might produce the same result. Experiment #2 showed an apparent R • C gain of 34% at the beginning of a course as a result of taking the test under a moderate time constraint.

Experiment #3 showed an apparent average R • C gain of 38% at the end of a course as a result of taking the post-test with instructions to read the test as if it were a class exercise. Since the class exercises are frequently done under moderate time constraints, this instruction is very similar to the instruction used to produce a similar result in Experiment #2.

One way of interpreting the results of the experiments is to say that both the pre- and post-tests "underestimate" what the student can do. Since they both underestimate by about the same amount they serve as an accurate measure of gain.

Another way of interpreting the results is to say that since it is so easy to change the scores one should be very careful about administering the tests in the prescribed manner. Even advising students to read the test the way they've been reading class exercises, then giving the directions in the prescribed manner, is likely to distort the results. Giving a speed exercise as a "warm-up" just before giving the test (as was done in Experiment #1) distorts the results.

Another way of interpreting the results is to say that gains of less than approximately 40% cannot be considered gains in skill but merely possible uncontrolled variations in the way the students approach the test. For example, here is a procedure likely to produce good pre- to post-test gains while still carefully following the instructions for administering the test:

1. Have some unbiased person administer the pre-test.

2. Just before the post-test, give some speed reading exercises under time constraints. Say to the students, "That's the way to read rapidly! If you zip along like that on a reading test, your scores will really be good!"

3. Have some unbiased person administer the post-test.

While one would be unlikely to do anything so blatant, one has no guarantee that students are unable to figure out Step 2 above without aid from the instructor. For example, in Experiment #2 the class average gain was 63%.

Yet, for half of the class at least, there is no evidence that they had done anything other than change their approach to the test.

The question remains as to which ways of administering the tests are the more valid as predictors of future achievement. The procedure outlined above would lead to scores which correspond more closely to scores students typically get on class exercises. One does not know whether that procedure would lead to better predictions than administering the test under the usual instructions. (The usual instructions have the student read knowing he's going to be quizzed before he has a chance to re-read and organize the material.)

These experiments have shown that the test scores can be influenced in a variety of ways. They provide little if any information as to whether the influenced scores are either more or less valid than test scores routinely obtained with the tests. They do, however, make R • C gains of less than about 40% highly suspect, even when the student's comprehension is high.

If a student's comprehension is low on a post-test, any R • C gain is suspect anyway. For example, suppose a student enters a course reading at 200 wpm with 100% comprehension or an R • C of 200. If he leaves with an R • C score of 400, it looks like a substantial gain, but if it comes from reading at 800 wpm with a 50% comprehension score we become skeptical. (The "chance" level on the test is 20%.) Reading at 200 wpm would enable him to get about 25% of the way through the test in the time he apparently took to read the test. Assuming that he knew just a little something about the material covered in the article before he read it, we can easily account for his score without hypothesizing a gain in reading skills.

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2. % R · C gain =

$$\frac{(R \cdot C \text{ post-test}) - (R \cdot C \text{ pre-test})}{R \cdot C \text{ pre-test}} \times 100$$

3. Experiment 3 was conducted by Carl Semmelroth of the University of Michigan Reading Improvement Service.

ASPECTS OF VOCABULARY TESTING

James I. Brown

As teachers of reading and frequent users of vocabulary tests, it is to our advantage to know in some detail the steps involved in developing such standardized test instruments. This knowledge provides the proper basis for a more intelligent evaluation of any given test and of the individual scores resulting from its use.

With group tests of intelligence, skills, or special subject matter areas, the teacher usually has a choice between a speed or a power test in the area to be evaluated. This is true in the area of vocabulary. The teacher may select vocabulary tests which require the student to answer over thirteen items per minute in order to finish within the allotted time, or a less demanding ten items per minute, or, finally, to power tests with no time limit.

Considering vocabulary testing more specifically, apparently two quite different thing are being measured. At least in the SRA Primary Mental Abilities Test both "Verbal-Meaning" and "Word Fluency" appear - the first, the usual kind of vocabulary test; the other, a test built to measure the ability to write and talk easily. The "Verbal-Meaning" sub-test correlates .677 with the General Vocabulary portion of the Iowa Tests of Educational Development, whereas the "Word Fluency" sub-test correlates only .191. Ideally, both facets of vocabulary deserve to be probed by a suitable test instrument, because of the differences revealed in each type. The steps involved in the construction of either kind of test provide additional insights as to their suitability for a given teaching situation and for students at a given level. An examination of the steps taken to revise the vocabulary portion of the two forms of the original Nelson-Denny Reading Test should make this relationship clear.

The first move was to re-check the current difficulty level and discriminating power of each of the 200 original vocabulary test items. Since the original items were constructed almost thirty years earlier, there was a question about the amount of change to be expected. Very little information could be found in the literature on this matter.

At first sight the two forms seemed still closely parallel, as shown in Table I.

TABLE I

Difficulty of Original Vocabulary Test Items

Difficulty Levels	Form A	Form B
90-100	5	6
80-89	8	9
70-79	12	6
60-69	16	16
50-59	23	22
40-49	23	21
30-39	9	9
20-29	1	9
10-19	3	2
Totals:	100	100

At two levels of difficulty, however, some imbalance could be observed; at the 70-79 per cent level of difficulty there were twice the number of items in Form A than in Form B, 12 as compared with 6. An even greater imbalance was discovered at the 20-29 per cent difficulty level where Form A had only one item as compared with 9 in Form B.

These differences, however, tended to balance each other so that the over-all difference in difficulty for the hundred items in the original two forms was slight - only 1.63 raw score points. For a student who completed all 100 items, the two forms were still closely equated. But the student who completed only the first 25 items would have 12 at the 70-79 per cent difficulty level in Form A but only 6 in Form B, with an additional 6 of increased difficulty at the 60-69 per cent level. In short, those students for whom the 70-79 or the 20-29 difficulty level was crucial would tend to be underrated or over-rated, depending upon which form was used for the testing.

An item-analysis of the 200 original items, using the Flanagan chart, revealed only two negatively discriminating items. Even after about thirty years, the quality of the items had remained high, the average validity of Form A and B being .397 and .382 respectively. Sixty-five new items were constructed to provide 1) more effective coverage at the secondary level and 2) more sensitive discrimination throughout the entire range. Of the 265 test items, 189 were found to have a validity index of .30 or higher, and were discriminating at a relatively high level.

Applying an even more rigorous standard and keeping in mind the desirable range of difficulty, the 160 best items from the 189 checked in the previous analysis were selected for use in the revised forms without further change.

These items were divided between the two revised forms, 80 to each, the forms being equated exactly as to average difficulty. This did not mean that each single item in Form A was of exactly the same difficulty as the corresponding item in Form B, but each was closely paired and the two sets equated exactly in over-all difficulty. The remaining 90 items were carefully re-studied and the 58 showing most promise for improvement were selected for further revision. After being tried out and item analyzed, forty were found to have sufficiently high validity for inclusion in the revised forms.

The excellent quality of the original items made it possible to raise the validity index higher than would otherwise have been possible. No items were included in the revised form which had a validity index below a .31. The revisions increased the validity index for Form A from .397 to .475 and for Form B from .382 to .474, a closer equating of validity as well as more discriminating power and a better item-for-item equating of difficulty.

This item-for-item equating in the revision was a matter of particular importance. While the over-all item difficulty in the original forms was well equated, the ordering of specific items was such as to reduce the reliability. As can be seen from Table II, a student working through the first 24 items of the original forms would be meeting some quite difficult words and not reaching many of the easier items coming later.

TABLE II

First 34 Items Distributed By Difficulty

Difficulty Level	Original Forms		Revised Forms	
	A	B	A	B
90-100	5	6	8	9
80-89	7	8	11	9
70-79	7	4	14	14
60-69	6	9	1	2
50-59	6	7		
40-49	2			
30-39	1			
Totals:	34	34	34	34

More detail is provided in Table III. In Form A, for example, the first twenty items ranged in difficulty from 96 to 36.5. In the first twenty items of the original forms, 80 per cent differed by more than one point with the corresponding items in Form B, the greatest difference being 57.2 points. In the revised form, after a complete re-ordering, only 10 per cent of the first twenty differed by more than one point with the corresponding items in the revised Form B, the greatest difference being only two points.

TABLE III

Comparable Difficulty of First 20 Items

Number of	Original Forms		Revised Forms	
Item	A	B	A	B
1	88	97	96	96
2	96	93.5	95.5	95
3	91	93	95	93.5
4	79	80	94	93.5
5	82	93	93.5	92.5
6	80.5	80.5	91.5	92
7	92.5	91.5	90.5	91
8	87.5	84	90.5	90.5
9	93	76.5	89	90
10	84.5	64.5	87.5	87
11	78.5	76	87	86
12	36.5	94	85	85.5
13	76.5	89.5	84	84.5
14	73	81.5	83	84
15	57	70	81.5	83.5
16	64.5	61.5	81	82
17	80	61	80.5	80.5
18	67	83.5	80	80
19	71	81	80	79.5
20	56.5	64.5	78.5	79

As can be seen, the development of a valid, reliable vocabulary test calls for careful attention to a range of considerations. Judgment as to the appropriateness of the test instrument is usually improved by knowledge of the specific steps taken in its development. For example, an examination of difficulty spread for the items in the Nelson-Denny Revision indicates that the test is designed to cover a wide range of individual differences, there being few items of exactly the same difficulty. Since the typical classroom, grades 9 through 16, has a range of over six years in reading ability at a given grade level, a wide range of item difficulty should be provided, so as to provide reliable discriminations for all students. The teacher with an atypical group of students should be guided accordingly.

With this as background, we become more sharply aware of the insights which can arise from probing new and yet unknown dimensions of vocabulary. Just as the SRA Primary Mental Abilities test uncovered a little known facet of vocabulary, so there is need for further development of a wide variety of test instruments if we are to discover new insights.

With vocabulary at the very heart of the reading process, we can perhaps learn more about reading at this stage from newly devised vocabulary tests than in any other way.

For example, teachers seem to disagree as to the effectiveness of the derivational approach to vocabulary development. The conventional type of vocabulary test is almost useless as an instrument in exploring and understanding exactly what can and cannot be accomplished and how effective such an approach is.

To examine this question, the writer has been experimenting with a specially constructed four-part test. The first subtest provided a measure of the common meaning of prefix and root elements. For that purpose, items such as the following were used:

Pro- means 1) together with, 2) towards, 3) behind, 4) without, 5) forward

The second sub-test attempted to measure how effectively the student could identify the presence of various prefix and root elements in words. A student might know that pro- meant "forward," but might not be able to spot the prefix in such words as reproduce, not looking past the prefix re-. Such items as the following were used to measure the student's ability to take this important step:

The word improvise contains a form of 1) pro-, 2) inter-, 3) pre-, 4) post-, 5) none of the preceding prefixes.

The third part of the test attempted to measure how effectively and accurately the student could use prefix and root knowledge in dealing with word meanings. If he knew the meaning of the element and could identify its presence accurately in a word, could he take still a third step and use that knowledge to bring him closer to the meaning of a relatively strange word containing that element? These items were so constructed as to reflect prefix or root meaning in only one of the choices, items such as the following being used:

A prolocutor is probably a 1) spouse, 2) orator, 3) plan, 4) spokesman, 5) typist.

The fourth and last part of the test focused on measuring how well the student could generalize from the few elements studied to the hundreds of almost equal usefulness, noting basic underlying principles of wide application. Sometimes in this part, as with the following example, the student is asked to deal with an imaginary element, to fix more clearly on the basic general principles:

If there were a prefix rib- which you combined with port to make a word, the probable form of the combination would be 1) ribport, 2) riport, 3) ripport, 4) ribbort, 5) ribort.

The four-part test was used with a group of men from IBM who were taking a course in vocabulary improvement, based on a study of key prefix and root elements. The test, in preliminary form, revealed some interesting patterns and suggested that the ability to use prefix and root elements is a complex skill, with at least four different facets to be noted.

As can be seen, the tests were at about the right difficulty level for the group - about the 55 per cent difficulty level. The pre-test indicated that the students knew the prefix elements somewhat better than the root elements, as would be expected. In relatively short time, use being made of programmed units as a major part of the instruction, gains were made in all four areas tested, from knowledge of meaning, to identification, application and, finally, to generalization to totally strange and un-taught elements. Perhaps of most importance are the results in that area. Apparently it is possible to teach general principles of language change with a relatively small number of elements and provide insights that permit the students to deal with greater effectiveness with the hundreds of elements not specifically taught.

If teachers and researchers are to discover the relationships between aspects of vocabulary and the reading, listening, speaking, and writing skills that depend so heavily on vocabulary, a variety of new vocabulary test instruments must be developed, each to uncover relationships yet unknown.

For example, in most composition courses word denotation and connotation come in for attention. Word denotation is well covered in

TABLE IV

IBM Class Results (27 cases)

Tests	Raw Score Range Pre -- Post		Raw Score Average Pre -- Post		Average Raw Score Gains	Per Cent Gain
I:A (Prefixes)	(4-20)	(16-24)	13.9	20.3	6.4	43%
B (Roots)	(3-22)	(11-25)	11.2	19.1	7.9	73%
II:C (Prefixes)	(8-20)	(15-24)	16.2	20.3	4.1	25%
D (Roots)	(8-22)	(14-24)	14.7	19.8	5.1	33%
III:E (Prefixes)	(7-19)	(12-22)	13.6	16.7	3.1	22%
F (Roots)	(8-21)	(12-23)	13.2	17.4	4.2	31%
IV:G (Prefixes)	(5-23)	(14-23)	12.6	19.1	6.5	52%
H (Roots)	(8-20)	(14-24)	15.2	18.3	3.1	20%
Total (A-H):	(82-149)	(128-185)	110.7	150.3	39.6	36%

(The range of improvement in terms of raw score points on the total was from 12 to 59. Each sub-test contained 25 items, a total of 200 for the entire test.)

vocabulary test after vocabulary test, but where is the vocabulary test to indicate awareness of connotative values? Since word connotations are used by clever writers to slant material in a certain direction, readers must develop an awareness of such devices to protect themselves from being led to wrong conclusions. Is it not a matter of particular importance that we know how well the reader is atuned to efforts to slant material toward acceptance or rejection? This facet of vocabulary might parallel the other in importance. We know little about this relationship because as yet we have no vocabulary test that provides an accurate measure of this dimension and brings needed insights into such relationships. In addition, the important matter of contexts, while coming in for some attention by test devisors, is a large area demanding extensive exploration, which means additional test instruments designed to do exactly that.

These are but a few of the many directions and dimensions of vocabulary which teachers of reading need to be aware of if they are to diagnose reading difficulties with accuracy and take the appropriate steps to guide students to desired reading effectiveness. With present limitations in the kinds of vocabulary tests available, we are handicapped in our understanding and, in turn, in knowing the appropriate steps needed to teach with increased effectiveness.

EXAMINATION PERFORMANCE AND EXAMINATION SET

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College students report that both amount of time spent and type of study done for an examination depend upon the type of examination announced (Class, 1). Further, it has been reported that students who study for recall type (completion or essay) items perform significantly better in answering both recall and recognition type (multiple choice or true-false) items (Meyer, 3). Class also found that preparation for recognition type tests frequently emphasizes attention to such details as names and dates. These findings, together with the reasonable assumption that effective study for recall type items should involve understanding of main ideas, appear to underlie a prime tenet advanced by texts and courses designed to help students perform at maximum effectiveness: namely, that they should study for any kind of examination in a way which emphasizes organization of ideas (Robinson, 5; Smith, 7; Shaw, 6; Weigand and Blake, 8). Robinson (5), for example, with reference to essay and recognition examinations, states:

> Actually, it is equally hard to make grades on either type of examination, and a method of study which emphasizes understanding the main ideas and their relationships should be used for both (p. 1).

Weigand and Blake (8) are more specific:

> If you prepare to recall the information, it will be relatively simple to recognize whether a statement is true or false (p. 59).

Smith (7) goes a step beyond this somewhat pragmatic orientation to tie the importance of the organizing overview used in study, at least by implication, to Gestalt theory.

In a somewhat different context, Keislar (2) has presented data which support the position that a "learning set" is shaped through the kinds of responses reinforced on tests the student has taken. Keislar notes that students are most likely to learn those kinds of things they have been reinforced for knowing in former examinations in a given course. His data suggest that a student will perform best on an examination of a type for which he is set as a result of past examinations. If this position would suggest any advice to the student, it would be that he should study specifically for the type of test announced.

While these two positions are consonant in several respects, they diverge in that one suggests the superiority of the essay set regardless of type of test, while the other suggests the superiority of the recognition set for taking recognition tests though acknowledging the superiority of the essay set for taking essay tests. The present study was undertaken primarily for the purpose of examining the hypothesis that the essay set will lead to superior performance on either a test of recall or one of recognition.

Method

Subjects

Subjects used in the study were 95 college students enrolled in an introductory course in Educational Psychology at The Ohio State University during the Winter Quarter of the academic year 1964-65. They were chosen from among students in three sections of a large lecture group, the three sets of subjects used in this study being equated on the basis of mean performance and range of performance on a recognition-type pre-test which sampled material to be presented in the course.

Learning Material

Each of the three classes attended three hour-long lectures per week, and two hour-long section meetings per week. Although there were absences, they did not occur more frequently in one class than in the others. All three classes heard the same lectures, but each was present at different section meetings, though all were taught by the same instructor. All were responsible for the same number of chapters assigned in the text, Psychology in Education by Pressey, Robinson, and Horrocks (4). All were told that they would be examined over material in these three sources of information.

Tests

Three types of mid-term tests were used. One class was tested twice during the ten-week term, each time with an essay test. The second class was tested twice, each time with a multiple-choice type test which was predominantly factual in nature. The third class was tested twice with a multiple-choice and matching type test in which an attempt was made to design the items in such a way as to stress understanding, organization, and the ability to draw implications from the learning material.

Procedure

The final examination, given to all three classes, consisted of a multiple-choice section containing approximately half implicational items and half factual items, and an essay section requiring two answers. Students in all three groups were led to believe, without being specifically told so, that the final examination would be of the same type as those which they had been given for mid-term tests. Each section of the examination lasted exactly one hour, and each was given separately. That is, in each case, the first examination given was collected before the second one was passed out. For each class, the first section of the exam was of the type it had had before and for which it had, presumably, prepared. The essay-set class was given the essay portion of the examination first while the two recognition-set classes were given the multiple choice section first. This particular ordering was dictated by pedagogical as well as by purely research considerations: namely that, in this way, whatever anxiety effects might have resulted from the presentation of an unexpected type of examination would be minimized and held constant across sections. If, for example, those set for an essay examination had been presented with the unexpected multiple choice section first, they would, presumably, have been more subject to decrement in performance as a function of increased anxiety than would the classes set for multiple choice, presented first with the type of examination they had expected.

All essay answers were read and graded by three judges: the lecturer in the course, the section instructor, and an experienced instructor in the course involved in no way with the teaching of the students used in the study. Papers were shuffled and graded "blind" in such a way that none of the judges knew the name of the writer of a given paper, which section he was in, or what grade had been assigned to a given paper by the other judges. Grading was based, in so far as possible, upon level of demonstration of understanding of main ideas and relationships and presentation of supporting factual material rather than upon such stylistic considerations as punctuation, spelling, and the like. Inter-judge reliability coefficients were of the order of .65 (Pearsonian). Ratings of the three judges were averaged for each subject, and the scores were transformed to standard scores with Mean=500 and S.D.=100 for ease of treatment.

Multiple choice tests were graded according to a standard key, and scores for all subjects were transformed to standard scores.

Results and Interpretation

Principal results are presented in Table 1. None of the differences in total mean score approached significance. It was therefore concluded that the claim for the superiority of essay set during study in preparation for exams regardless of whether an essay or recognition type examination is given, was unsupported by the results of the present study.

Interpretation of other features of the data presented in Table 1 is not as simple as it might at first appear. Since each class took the type of test for which it was set first (an expedient discussed in the Method section above), and since each class suffered a decrement in performance from the first to the second test it took, one might suggest fatigue rather than the influence of set as an explanation for the decrement in each case. Indeed, one might expect some decrement as a function of fatigue, although it seems unlikely that the differences could be explained entirely in this way.

While the present design does not lend itself to the direct ruling out of the fatigue factor, if one decrement were significantly greater than the others, the difference in the differences might reasonably be interpreted as attributable to some factor other than fatigue. One might expect, for example, on the basis of Meyer's reported findings, that the drop from multiple choice performance to essay performance for the recognition-set classes would be greater than that from essay to multiple choice for the

TABLE 1

Mean Scores for the Three Classes

Class	**N**	**Essay**	**Multiple Choice**	**Decrement**	**Total**
Essay	33	549.61	455.06	94.55	1004.67
Recog (Factual)	28	483.79	534.96	51.17	1018.75
Recog (Special)	34	465.15	516.15	51.00	981.30

essay-set class. As may be seen in Table 1, the essay-set class suffered a greater decrement in performance on the multiple-choice section than did either of the recognition-set classes on the essay section. While none of the differences in decrement were great enough to be statistically significant, it is interesting to note that the direction of decrement differences is the reverse of what would have been expected on the basis of Meyer's findings. While this finding might be explained in a number of ways, it can scarcely be interpreted as evidence supporting the superiority of the essay set for preparation for multiple-choice type examinations.

Discussion

The results of this study raise doubts as to the universal applicability of the injunction so commonly given, at least by implication, by those involved in study-skills counseling: namely, that one should study for practically any kind of test as if for an essay test. The reasoning behind this position is logically pleasing and may even find some support in the general stand of Gestalt and related theory. The results of this study, however, lend no support to this position.

Some guesses might be hazarded as to why these data diverge so sharply from those cited which appear to support the universal efficacy of the essay set in preparation for examinations. In most cases such data derive from laboratory or quasi-laboratory studies in which small amounts of material are learned, what is learned must be remembered for only short periods of time, and testing is rather direct and non-involving for the subjects. To extrapolate from findings in this setting to the vastly complicated world of the college student who is learning a great many things about several different large bodies of material which he is expected to remember for relatively long periods of time may be somewhat unreasonable. On the other hand, as we have seen in this study, the "real world" setting imposes limitations also. Use of the design which would have controlled such effects as fatigue was made infeasible by anticipated undesirable anxiety of subjects presented initially with an unexpected type of test (involved as these subjects were in taking a final examination which would count on their records, and all that this entails). This, in turn, made interpretation of results more difficult.

The results of this study should not be interpreted as evidence that performance on multiple-choice type tests does not rely, to some degree, upon a kind of organization of material. They do suggest the possibility that the kind of organization of material one does when preparing for a multiple-choice type examination may differ from that which he does when preparing for an essay examination. Further research might be directed at discriminating among differing types of organization.

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PERCEPTION AND THE HANDICAPPED COLLEGE READER

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Reviews of the published research in reading appear annually, like a calendar. Such reviews usually cover methodology, teacher preparation, identification and measurement of the many so-called reading skills, dynamics of the reading process, as well as perception. These reading investigations have been described by the reviewers as "fragmentary and unrelated," "too practical," "oriented toward content, methods and mechanics," "varied in quality and importance" and "very sparse and inconclusive in certain areas."

One of the major areas of "sparsity and inconclusiveness" of research is in the area of perception in reading as it relates to college students and adults. Perhaps we can stimulate some research in this area by this paper.

What happens in the brain of a college student when he "sees" an object and recognizes it? A complete answer to this question is not within the power of any educator, psychologist or physiologist, primarily because the verb "see" denotes a very tricky process with seemingly unlimited complications.

It is generally accepted that what happens during the process of seeing is not a psychophysical action related to one area of the cortex. Instead, seeing, or perception, is inter-related among the many areas of the cortex, and involves, among other things, the visual, auditory and kinesthetic senses as well as an accumulation of learned responses acquired during the years of reaching adulthood. Perception, then, is a mental process triggered by a sensation or sensations and is the organization of these sensory impulses on the basis of some known experience into a meaningful concept. With greater learning and a wider experience with words the result should be an automatic recognition of a word, its sound and its relevant meaning. Automatic as perception should be, it still requires time--a fraction of a second minimally. Herein lies an area that merits extensive and more exacting research.

For example, delayed perception among drivers results in accidents. A driver who sees a car approaching from his right at an intersection and fails to respond to his perceptual cues is not an unusual cause of a serious accident. More pertinently, the driver who perceives the stop sign and fails to stop is too commonplace among our traffic statistics. Why does he fail to respond to his perception of a printed sign or to a situation? The researchers in traffic safety are working on this phase of perception and have some practical answers.

A student who sees his assignments and fails to perceive the material is very prone to become an academic statistic on the "dropped" list of our crowded universities. Why should a student, selected for his scholarly potential, have such inadequate perception that he fails in his work?

There appear to be at least three major points that are relevant to understanding the relationship between reading and the perceptual process:

(1) Perception, seemingly simple, is a very complex process with many possibilities of failure or error within its physiological, neurological, and psychological components.

(2) Perceptual efficiency has a direct relationship to reading effectiveness and any lack of perceptual efficiency will result in a corresponding loss in reading effectiveness.

(3) Perceptual handicaps, while known to exist by the reader, are not necessarily subject to spontaneous self-remission but are correctable after detailed diagnosis and subsequent perceptual training.

To illustrate some facets of the relationships between perception and reading among college students we will present three selected research projects--one in the form of a proposal and two completed projects. These studies, hopefully, will stimulate discussion, provoke criticism and spark a question or two for more research in the area of reading perception of college students and adults.

The first example is in the form of a research proposal, which has since been started, at the University of Illinois, Urbana campus.

Perceptual motor and neurological deficit have been associated with reading deficiencies of younger children by a number of authors and some effort has been spent in extending these findings to older subjects. A few studies found no relation between performance on the Memory for Design test and reading impairment in 6-18 year olds. But Silver and Hagin (5) found that children with specific reading disability as 9-10 year olds continued to show certain neurological and perceptual deficits as adults. Such chronicity of deficit was more typical of persons with organically produced reading deficit than of those with developmental deficit. Children with developmental deficit seem to have recovered partially or to have attained compensation techniques as adults.

In general, researchers have not gone beyond uncovering the correlation between reading deficiency and abnormal neurological and perceptual-motor performance. At least several questions remain: Is the degree of perceptual-motor and neurological disturbance in any way predictive of improvement in a developmental reading program? Do such disorders improve concomitantly with reading improvement?

It is likely that perceptual and neurological abnormalities are produced by organic impairment which becomes less reversible with age, and that poor perceptual-motor habits are more firmly established in older persons. Either case suggests that there would be a positive correlation between perceptual-motor performance and neurological abnormalities and improvement in a reading course. If perceptual-motor performance itself should improve following the reading course, then there would be evidence that it is not invariably produced by irreversible organic impairment, even in adults.

To answer these questions, it is proposed to give some of the more promising tests of perceptual motor and memory performance and several of the neurological tests used by Silver and Hagin (5) to the developmental reading classes at the University of Illinois. Pre- and Post-course testing with the Bender Gestalt, the Graham-Kendall Memory-for-Designs, Trails A & B, WAIS Digit Symbol, and Memory passages from the Wechsler Scale form I, and tests of cerebral cominance is planned.

The Bender Gestalt is one of the most widely used psychological tests of organicity and has been used often in reading research (1). Although the research literature concerning this instrument is rampant with flagrant subjectivism and abuse of experimental design, several impirically-derived objective scoring systems are available. The other tests to be used have reasonably adequate research backing, and have been used, although somewhat infrequently, in reading research.

The reading deficit of the experimental groups is defined relative to the norms of a college population which is above the national college median on both the ACT and SCAT. Such a select group could negate finding the perceptual neurological signs which are expected. The Bender-Gestalt and MFD scoring systems, in particular, may not discriminate within this group since normals typically get zero or very low scores on them. It may be advisable to shorten exposure times of the Bender Gestalt and MFD stimuli in order to increase task difficulty and thus to better differentiate subjects. Such a procedure would, of course, make the comparison of results to previous studies and to norms quite questionable. A control group will be employed. However, it will be possible to accept as control subjects only persons who are above the 35 percentile in reading ability on the Coop English test of Reading Achievement. This means that the group will not be random and that it will be difficult to match it with the experimental group on relevant available variables such as SCAT and ACT scores. Thus, it will be more meaningful to compare their pre-post change scores, rather than their absolute pre-and post scores, with the experimental group scores.

Initial performance tests used will be correlated with pre-course reading speed and comprehension and with degree of improvement in various course areas. Degree of pre-post improvement on the tests shown by the experimental subjects will be compared with improvement shown over a similar period by the control subjects. It is hypothesized that: I. There will be a positive correlation between initial perceptual-motor test performance and initial speed and comprehension scores; II. There will be a positive correlation between initial perceptual-motor performance and degree of improvement shown in the course; III. Course subjects will improve more than controls in perceptual-motor performance.

Several questions relating to the construct validity of the tests can also be asked. Richie and Butler (2) have found, in retardates, significant correlations (.05) between MFD errors and WAIS Verbal IQ (-.28), Perf. IQ (-.62), and Full Scale IQ (-.52). No equivalent IQ measures are available for the subjects in this study, but SCAT V and Q scores are available. A correlational analysis of performances on these and on the perceptual-motor tests will be made. There is no implication that SCAT V and Q are equivalent to WAIS V and Performance.

A study completed at the University of Minnesota by Torrance and Harmon (6) is somewhat unique and illustrates still another perceptual problem among college students.

Among the many sub-areas of perception that have been little explored in reported research studies is the effect of mind set on text book reading. Usually a normal person's activities are integrated to the extent that he does not respond to every stimulation of the sense organs. He selects the stimulus to which he will respond and he also is in control of the response to the stimulus and of the mental operation involved in responding.

Torrance and Harmon (6) arranged an experiment to establish sets which they hypothesized would result in the utilization of Guilford's five mental operations: cognition, memory, convergent thinking, divergent thinking and evaluation (4). Cognition is defined as recognizing facts, memory is retention, convergent thinking leads to the development of conventional solutions from known information, divergent thinking produces new and untested solutions and evaluation relates to decisions of goodness or adequacy of thinking.

The author used 115 graduate students in a Mental Hygiene course and divided them into three groups. One group was instructed to read their assignments with a set or intent to remember everything they read. They were instructed to use whatever devices they liked to remember what they read.

The second group was instructed to critically evaluate the content of what they read. Their set was to question everything the author had to say, to find defects in reasoning and factual information.

The third group was told to think about the many uses of the information being read, particularly uses related to the student's personal and professional life.

Each group used their assigned reading set for one week. At the end of the week an evaluation form was filled in by each student, reporting his ability to maintain the assigned set, the degree of difficulty using the set and the time in minutes that it took to accomplish the reading assignment the last day of the week. Polar-adjective pairs on a seven point scale was used for student reaction to the set used--e.g., good-bad, labored-easy, active-passive, etc. Each Friday subjects were given a 20 minute test covering the reading assignment for that day using questions covering Guilford's five mental operations.

Each week for three weeks the groups were given a new reading set to be used that week so that in three weeks each group had used each of the three sets and had been evaluated on each of the sets.

The authors report the Creative set produced the highest mean each week on the Creative questions.

The evaluative set produced the highest mean among the groups during one week only when a problem solving question was asked. Those using the memory set achieved the highest mean on those questions only during the third week. Differential effects on the memory items were only statistically significant in the third week and the cognitive items were not consistently differential.

The subjects reported the memory set easiest to maintain. There were no significant differences on the estimated length of time spent on reading the assignment.

The authors conclude that no one reading set was found to be superior to the others.

This study offers some provocative possibilities for perceptual efficiency studies. Would a replication of this study with a less sophisticated group of subjects be fruitful? Would the use of structured sets of some similar type be useful in exploring the "delayed perception" factor mentioned earlier? How would a control group have fared in the study?

The third illustration is a study done at the Child Study Center, University of Denver which attempts to apply Piaget and Morf's (3) logical model of perceptual development to reading. Although this research was performed with younger children, the hypothesis is unusual and would seem to hold some merit for consideration and exploration with the reading processes of college students and adults.

The authors of the research describe Piaget's theory briefly. Piaget felt that perception of the young child is centered, that is, perception is caught and held by the dominant aspects of the visual field. Dominant aspects in this case are determined by Gestalt-like principles such as "good form" and "continuity," which Piaget refers to as "field effects." As the child grows older perception presumably becomes progressively "decentered" in that perception is gradually freed from its earlier domination by "field effects." Perceptual decentration occurs after the development of a higher order of perceptual organization that Piaget calls perceptual regulations.

These perceptual regulations allow the child to respond to the stimulus without actually manipulating it--i.e., to unscramble the letters u l b e mentally and respond "blue."

Therefore, it would seem that perceptual regulations are comparable to but not identical to concept formation and does require a type of conceptual logic. The researchers, therefore, undertook an investigation to test the notion that "learning to read involves a kind of logical activity."

They used two groups of children, slow readers and average readers, closely matched by age, sex and a non-verbal measure of intelligence (the Otis, 1952, Alpha). Perceptual decentration was measured by using two sets of 8x10 cards containing ambiguous figures in black and white and cardboard shields cut to cover the cards in set B in such a way that when placed over the drawings the hidden or reversed figures were immediately apparent.

The child was tested on set A and a pretraining score of the number of figures seen was established. Immediately after testing, the child was presented with set B and by use of the screening cards the child was trained by very direct and revealing clues to perceive the figures he was unable to perceive spontaneously. Each child was trained to perceive all figures in set B. The learning score was the number of clues needed to reach perfection. Immediately after training the child was tested again on

Set A. The post-training score was the number of figures detected.

Slow readers were found to be significantly less adept at figural decentration, had lower pre-training scores, required a significantly larger number of clues during training, and had significantly less transfer of training than average readers. In general, the authors found their results in agreement with the hypothesis that reading involves the ability to decenter perception and that the more decentered the perception the better the reader.

Although the authors admittedly did not find proof that perceptual decentration improves with age, from their results this is still a possibility, given a test with a higher ceiling.

The implications of this study strongly suggest that perceptual activity in reading involves mental manipulations of the given material at a higher level than simple discrimination and that training in such mental manipulations is possible.

It is not our intent that these reported research projects be a review of the literature--instead they were selected and are offered as a means of emphasizing the areas of reading among college students and adults where more research and clarifying discussion are needed.

It has not been possible in such a brief paper to do more than explore a few of the principal areas of the perceptual process in college reading and to attempt to illustrate these areas with a few selected research studies. The crucial points are that perception must be dealt with at the college level from its broadest definition: (1) perceptual efficiency is not simply stimulus-response; (2) it may be alterable by structured sets; and (3) may well be explored from both maturation and experience.

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VISUAL TEST SCORE DIFFERENCES BETWEEN HIGH AND LOW READING ACHIEVEMENT GROUPS AMONG COLLEGE FRESHMEN

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The purpose of this study was to examine the differences in visual skill performance between college freshmen of high and low reading ability. This study is part of a long-term project to demonstrate experimentally that visual performance is an important factor in reading efficiency.

Reading as a Visual Act

It is well known that during reading the eyes do not move smoothly across the printed page but make a series of three to five discrete fixations per second, or approximately 12,000 fixations per hour. Each fixation involves the focusing and aiming of both eyes at the same point in three dimensional space. Each dimension can be represented by one or more visual skills which may be measured by standard vision screening tests. The purpose of this study is to test the hypothesis that the ease and accuracy of performance of the visual skills corresponding to the three spatial dimensions is related to reading achievement.

A description of the three dimensions and the tests which are used to measure them follows:

1) The z-axis or depth dimension refers to the focusing ability of the eyes. Performance on this dimension is most commonly established as acuity performance on the Snellen chart at a distance of 20 feet. For reading, however, acuity should be measured at the near-point distance of 14 inches.

2) The y-axis, or vertical dimension, refers to the aiming of eyes along the vertical axis. This skill is measured by the vertical phoria test.

3) The x-axis or lateral dimension is perhaps the most important for reading. During reading, both eyes must realign themselves for each fixation on the lateral axis. At the same time, focus in the depth dimension and aiming on the vertical axis remain relatively constant.

The lateral dimension is measured by three tests in this study, two standard tests and one new test as follows:

a) Lateral Phoria Test: This test measures the relative alignment of each eye when no fusion target is present. A tendency of the eyes to aim inward is called overconvergence or esophoria, while a tendency of the eyes to aim outward is called underconvergence or exophoria. Since there is no fusional target on this test, subjects frequently report that the target moves. It is thus possible to get a measure of both the deviation from orthophoria and the amount of movement.

b) Fusion Test: This test measures the ability of the eyes to combine separate images into a single mental image. If the two images are not too disparate, a reflex towards fusion will operate.

c) Fixation Disparity Tests: This test measures lateral phoria with a fusion target. While the lateral phoria test measures deviation from orthophoria without a fusion target, and the fusion test measures the ability of the eyes to combine the test forms into a single image in an all-or-none manner, the reading act represents a situation where deviations from orthophoria can occur while fusion is maintained. In order to measure such deviations, tests of fixation disparity were designed. These tests, which measured lateral aiming with a fusion target were designed by Woolf (13) to be used with the Titmus Optical vision tester (T/O tester). They represent an extension of his work on a fixation disparity test in the 50's (1), (2).

Review of the Literature

The results of previous studies of the relation between vision and reading have been contradictory, to say the least. A few studies with college, elementary, and high school populations such as those by Silbiger and Woolf (10), (11), Kelly (6) and Robinson (8) have shown that good reading ability and educational success tend to be related to exophoric responses, and poor reading and lower academic achievement with esophoric responses. Bond and Tinker (3) report contradictory results in their review of studies relating eye muscle balance to reading achievement. For example, Eames (4) found a slight tendency for poor readers to be hyperopic and exophoric at reading distance. However, Stromberg (12) found no difference in most visual skills between 71 fast and 71 slow readers, although fast readers were found to have superior ductions (the ability to handle overconvergent or underconvergent prism stress). Jackson and Schyo (5) found that students with defective vision tended to have slightly better reading scores.

One of the reasons for such conflicting results might be differences in testing methods. It seems that most studies measured vision without corrective glasses. In the present study, however, the students wore their glasses so that the vision scores represented usable vision in everyday life. On the basis of the analysis of the visual factors related to reading and the results of previous studies, it would be expected that differences between good and poor readers would show up on near-point vision tests rather than far-point tests and that measures of lateral phoria and fixation disparity would prove of special importance. It was also expected that greater differences would be found on the fixation disparity test since this represents a skill which more closely approximates the reading act.

Hypothesis:

The study was designed to test the null hypothesis with respect to the relation between vision and reading achievement for the vision tests previously outlined.

Method and Procedure:

Subjects:

The subjects for this study were chosen from freshmen at Drew University (Madison, New Jersey) scoring in the top and bottom one-third of their class on the Speed of Comprehension (S of C) sub-test of the Comparative English Test (CET). The CET was administered to all freshmen during orientation week for the purpose of selecting students required to take the Reading and Study Skills Course (RSS). For a random sample of 78 freshmen out of the class of 280 the mean S of C score was 166.7 with a standard deviation of 6.54. For this group S of C scores correlated .60 with SAT verbal scores.

Vision tests were administered to 38 Ss who scored at 159 or below on the S of C test. These students comprise the low reading group (Low CET, $\bar{X}$ = 157.29). Vision tests were also given to 25 students with scores of 170 or above who comprised the high reading group (High CET, $\bar{X}$ = 174.15).

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Vision Tests

The following vision tests were given to the Ss in the study from the T/O tester battery.

Far Point: 1) acuity right eye; 2) acuity left eye; 3) vertical phoria; 4) lateral phoria; 5) depth. Near Point: 6) acuity right eye; 7) acuity left eye; 8) lateral phoria; 9) fusion. The following tests of fixation disparity were given on the T/O tester at near-point: 10) fixation disparity-orthophoric; 11) fixation disparity 10^{Δ} (prism diopters) convergence; 12) fixation disparity 10^{Δ} divergence.

The latter two tests of fixation disparity required the S to demonstrate aiming ability under conditions which forced convergence or divergence respectively. Theoretically, the more precisely an individual can establish fusion as prism vergence is introduced, the less disparity he will show (7).

Procedure

Vision testing was conducted during October, November, and December of the fall semester. The testing was done individually by a student assistant trained by the author. Testing was conducted with glasses as normally worn by the student. That is, if glasses were worn for distance but not for reading, they were worn for the far-point tests only. If glasses were prescribed but not worn normally, they were not worn during the test. The aim of the vision testing was to measure the Ss' visual skills as they normally functioned during his everyday life.

The instructions for the vision tests were slightly modified from the standardized instructions accompanying the T/O tester. These modifications better met the needs of the college population without altering the purpose of the tests.

Results:

The acuity test score equals the last response before two wrong. Scores were in terms of better eye and worse eye rather than right and left. The scores when multiplied by 10 represent percent normal vision.

The vertical phoria test is scored in deviation from zero phoria, a plus equals a score above the x-axis and a minus below the x-axis.

The lateral phoria test was scored with deviations from zero phoria. Deviations in the esophoric direction were scored plus and in the exophoric direction were scored minus. The units represent 1 1/2 Diopters, or approximately 30' arc. In addition to the standard lateral phoria score, the amount of movement and the absolute deviation, regardless of sign was scored for lateral phoria at near-point.

The depth score represents percent normal depth directly.

The fixation disparity tests were scored in essentially the same manner as the lateral phoria test. The unit on the fixation disparity slide is 10'arc however. For fixation disparity-orthophoria both relative and absolute deviations were scored.

Table I presents the mean scores and t tests for the high and low CET groups on the 16 vision test measures.

TABLE 1

Vision Test Scores for High and Low CET groups:
means, and results of t tests.

	High CET N = 25	Low CET N = 38	Significance
Far Point Tests			
1. Acuity best eye	10.48	10.71	t = .31
2. Acuity worse eye	6.96	8.58	t = 1.94
3. Vertical Phoria	-0.92	0.18	t = 1.75
4. Lateral Phoria	-1.32	-0.37	t = 1.71
5. Lateral Movement	1.16	1.24	t = 0.26
6. Depth	76.00	73.42	t = 0.393
Near Point Tests			
7. Acuity best eye	12.32	12.21	t = 0.203
8. Acuity worse eye	11.24	9.39	t = 2.40*
9. Fusion	3.16	3.18	t = 0.22
10. Lateral Phoria	0.00	-0.82	t = 1.18
11. Lateral Movement	1.92	1.08	t = 2.56*
12. Lateral Phoria absolute	1.68	2.34	t = 1.43

TABLE 1 (continued)

Vision Test Scores for High and Low CET groups: means, and results of t tests.

	High CET N = 25	Low CET N = 38	Significance
Fixation Disparity Tests			
13. Orthophoria	0.08	1.84	t = 3.72**
14. Absolute, Orthophoria	0.80	1.96	t = 2.45*
15. Convergence	-2.64	-0.63	t = 4.44***
16. Divergence	3.08	3.95	t = 1.47

* $P \leq .05$
** $P \leq .01$
*** $P \leq .001$

The results in general support the expectations outlined in the introduction. On none of the far-point vision tests were the differences between High and Low CET groups significent. On three of the six tests, however, the differences approached significance, (acuity worse eye, vertical phoria and lateral phoria).

On the near-point tests, while there is no difference between groups on acuity better eye, acuity worse eye is significantly different with High CET being superior to Low CET. While neither relative or absolute lateral phoria is not significant, movement is significant. However, the High CET group shows significantly more movement than the Low group. Analysis of the direction of movement, showed a tendency for the High CET group to move towards an exophoric or underconvergent deviation. This tendency is confirmed by the results of the fixation disparity tests.

Significant differences between groups were found on three of the four fixation disparity tests. On F. D. orthophoria, High CET scored almost zero deviation while Low CET's mean was 1.84 minutes of arc convergent. This finding confirmed the findings of Silbiger and Woolf (10), (11), Kelley (6) and Robinson (8) who found poor readers to be more esophoric than good readers. The groups also differed significantly on the F. D. absolute deviation scores with Low CET scoring in the direction of greater lateral imbalance. The groups differed significantly on the test of F. D. with 10^{Δ} convergence. Low CET showed significantly more ability to handle the convergent stress than the High CET group, which was significantly more divergent on the test. On the F. D. 10^{Δ} divergence test no significant differences were found. Since High CET showed more divergent tendency than Low CET, it would be expected that High CET would have a lower deviation score than Low CET. The failure to obtain this result may be an experimental error since the F. D. divergence slide was presented after the F. D. convergence slide, rather than after the F. D. Orthophoria slide resulting in a jump of 20^{Δ} instead of 10^{Δ}. A new test of performance on these slides is planned.

Discussion

The results of the study indicated that high and low reading groups differ on certain visual skills related to the reading act. Special attention was given to tests involving the aiming of the eyes along the lateral axis. Differences in visual skills were found when vision testing was conducted with glasses as normally worn. Furthermore, these differences were found in a college population for whom the Low reading group still represented a sample of students who ranged from the national average to one standard deviation above the average. If differences in visual skills can already be demonstrated between average and high achieving college students, might not greater differences be found between readers who differ more greatly on their reading achievement? Would more deviations from normal be found among a really low reading group since on the vertical phoria and the fusion tests very few students deviated from normality? This study has not taken into account dynamic visual skills which involve the smoothness and accuracy of eye movements such as pursuit and saccadics. Might not high and low reading groups differ on tasks measuring these skills? It is hoped that the results of this study and these questions will point the way for further research.

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OPERANT CONDITIONING TECHNIQUES WITH A "DISADVANTAGED" GROUP

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Various suggestions have been proposed for the solution of reading problems of the disadvantaged student. Let us set aside the problem of an exact definition of "disadvantaged" because the rules for defining keep changing. However, lack of definition has by no means hampered attempts to define problems and suggest solutions. In a single issue of the International Reading Association proceedings we note the following: Harris (5) has suggested that small group, after-school instruction, may help when combined with thorough medical examination and treatment. Sheldon (10) points out that the culturally disadvantaged come to school without conventional responses to commonly accepted objects pictured in middle class textbooks. He proposes spending part of the early school years teaching students to see, speak, and listen like standard American youth. S. Allen Cohen (2), on the other hand, suggests that the "disadvantaged" student lives in a pretty rich world on the streets of Gotham. It might be easier to teach him to read about the black and white world he knows than to train him to "experience" an altogether unlikely world. Edwards (3) and Nason (6) agree that encouragement and general rewarding praise are especially desirable and that such praise and reward for success may have been lacking in the early school years. Edward Zigler, speaking at a U.S. Office of Education's National Conference on Education of the Disadvantaged states, "Disadvantaged children are not motivated by what the middle class takes for granted. The lower class child needs immediate and tangible reward." (12, page 10)

The lack of reward may be traced to any number of antecedent conditions. The student may never have learned certain kinds of perceptual discriminations necessary for reading. In class social behavior may make it necessary for the teacher to act like a warden rather than a tutor and administer punishment rather than praise. Professor Arthur Pearl feels that "punishment is not an effective deterrent, but we operate in the schools as if this were the only basis for controlling behavior." (7, page 11) A lack of common language between teacher and student may make it very difficult for a student to perform in such a way as to earn a reward. ("John, who killed cock-robin?" "Jeese, Teach, he's still alive. I seen him last night on TV.") Seemingly these authors are all saying that the disadvantaged student is suffering from a lack of positive re-enforcement. He is not getting rewards for his classroom behavior.

Several researchers have demonstrated that positive reinforcement techniques can be used to teach elementary reading skills. Staats (9), Evans (4) and Addison and Homme (1) have reported marked success using a wide range of student selected reinforcers to teach elementary skills to students on an Indian reservation. More recently, Raygor, Wark and Warren (8) have shown that positive reinforcement is extremely effective in producing rapid rate gains by college students.

Up to this time there have been no studies using aversive stimulation with these populations. The papers presented at the IRA meeting would suggest that aversive control was quite typical in a teaching situation for the disadvantaged. However, we might speculate, on the basis of the general effectiveness of positive reinforcement that these same students would profit markedly from a positive reinforcement situation. This study reports a systematic attempt to compare the effectiveness of positive reinforcement and avoidance on the reading rate behavior of students from a "disadvantaged" background.

Subjects

In the summer of 1966 the University of Minnesota carried out a program to motivate financially disadvantaged high school students to go on to college. Under an Office of Economic Opportunity grant, 63 youngsters spent six weeks on campus in project Upward Bound. The students, juniors and seniors in high school, came from families living below the then current poverty criterion--$3000.00 per year for a family of four. The students came from 42 different schools in 15 counties throughout the state of Minnesota. They ranged from age 15 to age 18, forty-one of them were males and 22 were females. Eighteen came from farm families. Twenty-nine of the 63 were from broken homes or else living apart from their families. Financially, 28 came from homes where the incomes were less than $4000.00 and five came from homes where the family incomes were $1500.00 or less. Fifty-four were Caucasians, five were Negro, two were Indians and two were classified as "other." The modal grade point average for the students was between a C and C+. They were nominated by teacher, counselors or civic officials as being underachievers who should be encouraged to go on to college. Part of their experience on campus was to work regularly each day in the Reading and Study Skills Center. From the group working in the Center, volunteers were taken to the laboratory to work on the project reported in this paper.

Method

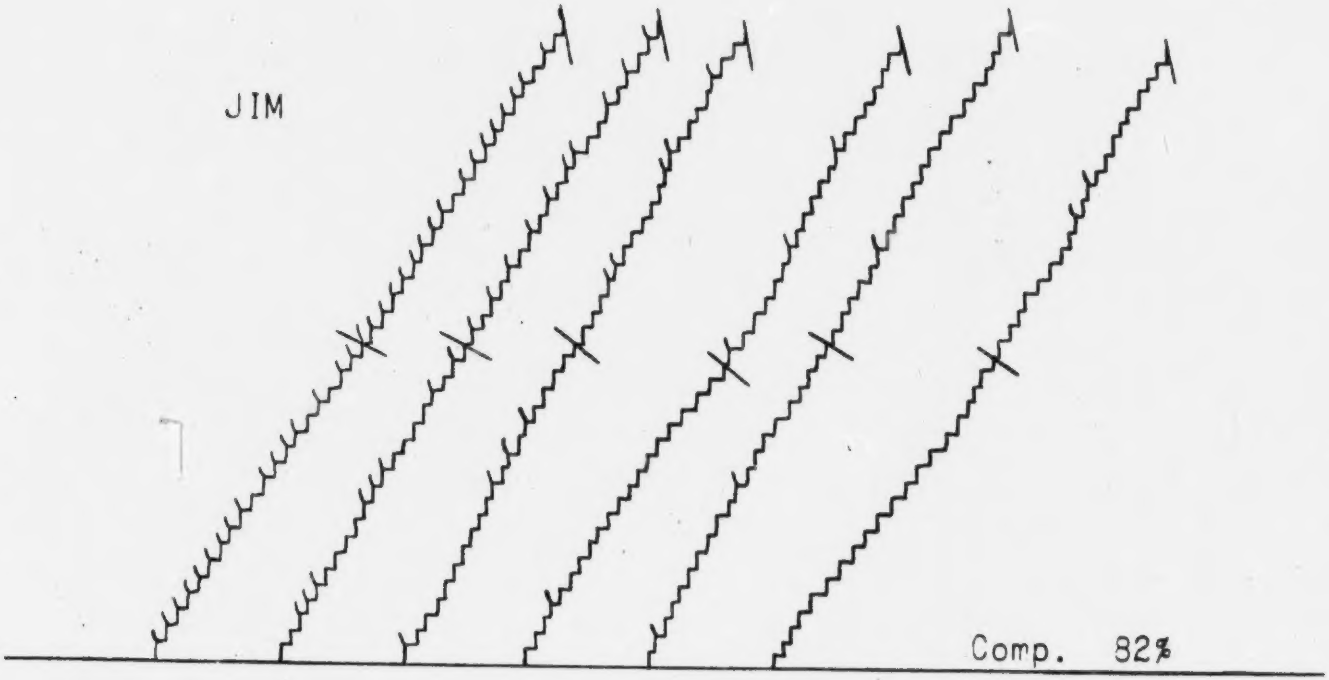
The students were working on a reading rate improvement task. The text was a secondary school level science fiction adventure story, with a teen-age hero. The material was retyped on 8½ x 11 paper in 200 word segments. The

100th and 200th word on each page was marked yellow with a felt tip highlighter. The student was told that every time he was reading and he came to the yellow mark, he was to push a hand switch. The switch was connected to the pen on a cumulative event recorder in another room. (For description of a cumulative event recorder see Wark (11).) The student was informed that there would be two conditions in the study. In the first conditions he would see a red light flash every time he pushed the button if his reading rate was above a criterion. The criterion rate was explained to him. If his rate was below that criterion the light would not flash. He was informed that a red light meant he was doing well. In the second condition, if his rate was above a certain criterion there would be no signal. However, if his rate fell below that criterion a loud buzzer would sound next to him. The buzzer meant he was doing poorly. The light and buzzer were both demonstrated. The student was told that the condition under which he was operating, positive reinforcement with a red light for increase, on aversive reinforcement with a buzzer for decrease, would be signaled by a hospital call bell gong. One gong would mean the light for rate above a criterion, two gongs would mean a buzzer for rate below a criterion. There would be six complete cycles of light and buzzer and the criterion would be increased for each cycle. The student was informed that there would be a retention test at the end of the reading. He was to read for as many cycles as he could in the time available to him.

Results

Seven students were tested under the alternating buzzer and light condition. In general they could be divided into two categories: Those that showed some over-all rate gain and those that did not. Figure 1 shows the reading curves for a student who did not gain much. Each line

COMPARATIVE EFFECTS OF LIGHT AND BUZZER ON READING RATE



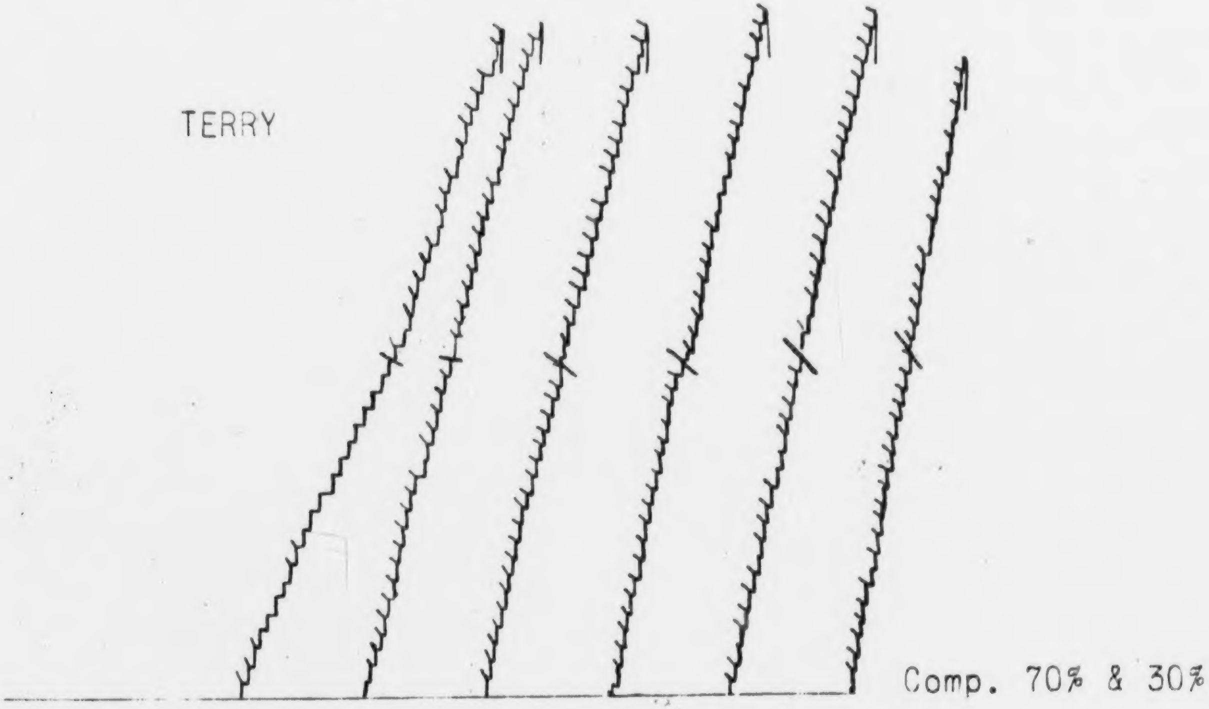
Light	229	260	282	241	274	219
Buzzer	244	253	284	280	268	275

is a curve for one cycle. The slash mark in the middle of each curve indicates a shift from light to buzzer. The curves have been redrawn to give the light treatment first. The slight upswing blip mark at the top of each step in the curve indicates whether the student met a criterion or not. For the light condition the slip indicates the student received a light for being above criterion. In the buzzer condition it means he avoided the buzzer. In figure 1 we notice that Jim's rate did not increase substantially for the first two cycles. There is the beginning of gain in the third cycle although it is not much. In the fourth cycle he began to show increases under the buzzer. The effect is most marked in cycle six. Under the light he read for an average of 219 words a minute, under the buzzer 275 words a minute. (Each stair step on the curve represents 100 words.) Overall he earned an 82% comprehension score. However, his over-all gain (from 229 to 275 words a minute) is hardly remarkable.

Figure 2 is a record of a student who made considerable gains. He more than doubled his rate. We notice that his major gain is under the buzzer condition in the first cycle. From then on, especially in cycles three, four, five and six the curves are more or less parallel, suggesting relatively little gain. This student was probably operating beyond his reasonable rate in the second half of the experiment. Notice that for the first half his comprehension score was 70%. For the last three cycles, when his rate is almost double his initial rate, the comprehension falls off to 30%. We noticed that there are blips on almost every response.

What conclusions can we draw about the relative effectiveness of buzzer versus light? Table 1 summarizes the rate gains for seven students under various numbers of cycles. Unfortunately, only subjects three, four and five completed all six cycles. The other subjects were either

COMPARATIVE EFFECTS OF LIGHT AND BUZZER ON READING RATE



Light	317	533	588	625	625	769
Buzzer	447	556	556	606	645	745

TABLE 1

CYCLES

	1	2	3	4	5	6
SUBJECT	L - B	L - B	L - B	L - B	L - B	L - B
1	163 - 174					
2	202 - 179	188 - 195				
3	500 - 526	482 - 500	513 - 606	588 - 645	727 - 909	800 - 950
4	317 - 447	533 - 556	588 - 556	625 - 606	625 - 645	769 - 745
5	229 - 244	260 - 253	282 - 284	241 - 280	274 - 268	219 - 275
6	211 - 198	217 - 235				
7	308 - 298	363 - 351	351 - 333	364 - 345		
$\overline{D}$	- 19.4	- 7.8	- 11.2	+ 10.5	- 65.33	- 60.66
σ_D	51.76	14.50	56.26	43.89	101.87	87.09
t	2.62*	3.24*	.79	1.20	1.92	2.08

*P< 05

MEAN AND STANDARD ERROR OF RATE DIFFERENCES USING LIGHT (L) AS POSITIVE REINFORCER AND BUZZER (B) AS AVOIDANCE SIGNAL, UPWARD BOUND STUDENTS started in the middle of the afternoon session or had to leave early for other appointments. However, we note that across all cases with the exception of cycle four the reading rate is higher under buzzer than under light. (Students were run in various sequences. That is, some students had the light first and some had the buzzer first. For Table 1 these differences have been removed and the data are presented as if the light were presented first.) We note that in cycles one and two the difference between rate under light and buzzer is statistically significant. In fact, if the original 7 subjects had finished the entire experiment, every cycle except number 3 would have shown statistical differences in favor of the light. These data are certainly indicative. They suggest that for this group of students aversive stimulation is a more effective technique than reinforcements for increasing reading rate gains.

Table 2 reports the result of various types of studies with 17 students. They were tested under a variety of different conditions. We studied the effects of extinction, the use of a buzzer as a signal for both reward and punishment, the use of college level history material as a reading task as opposed to the science fiction text reported previously and the effects of different types of instruction. We were frankly exploring and attempting to get more information on the way these students operated.

Of the 17 students, eight showed less than ten words per minute increase. One student made a very substantial increase under the light condition. Another eight made, on the average, 50 words per minute increase using a buzzer. The figures reported in Table 2 cast some doubt on the basic notion of the effectiveness of positive reinforcement.

TABLE 2

NO INCREASE (LESS THAN 10 W/M	-	N = 8
LIGHT	44	N = 1
BUZZER	50.2	N = 8

MEAN INCREASES IN READING RATE UNDER POSITIVE REINFORCEMENT (LIGHT) OR AVOIDANCE SIGNAL (BUZZER), UPWARD BOUND STUDENTS

David M. Wark, Monica Kolb, Joan Tonn

Conclusion

We found in these studies that for our students, from a frankly disadvantaged background, use of an aversive stimulus was more effective in producing changes in behavior than the presentation of a positive reinforcer. Of course, it is reasonable to raise the question, "Was the light the reinforcer and was the buzzer aversive?" In previous studies evidence has been accumulated that the answer is yes. Raygor, Wark and Warren (8) and Wark (11) have cited rather clear evidence that for normal college students a light can be used contingently with increase in reading rate as a reinforcer and a buzzer can be used contingently as an avoidance stimulus. Under those conditions the light and buzzer have both been demonstrated to increase reading rates. That is, they have been demonstrated emperically to be reinforcers. In this case the situation is not quite as clear. Emperically we can only say that we have two contingencies. A stimulus is provided to the student if he does better than expected (the light) or if he does worse than expected (the buzzer). Sequentially, at least, this meets the criterion of a reinforcer and a punisher. In that situation we find that the second contingency, a signal for not doing well, seems to work better with the students in the sample.

Is it appropriate to generalize this finding? Admittedly the students in this study cannot be considered a random sample of "disadvantaged" students. First of all, they were selected by their teachers, counselors, and local civic leaders as being somehow more worthy of attention than their peers. Secondly, they were volunteers taken from this selected pool to participate in an experiment. On both counts they are atypical. However, since they came from both rural and urban settings throughout the state they are probably typical of an important sub-set of the disadvantaged--the ones perceived by the "establishment" as worthwhile of help. We might, therefore, say that the study has no widespread generality but important selective generality.

Reviewers of this study have suggested that the results are not at all surprising. They pointed out that disadvantaged students, since they are used to non-reinforcements in a classroom situation, should do better under such treatment. This, of course is somewhat at variance with the equally acceptable notion that the students are deprived of reinforcement and should do well when it is forthcoming. Neither of these bland generalizations should be accepted. The first would be acceptable only after much more research. The second is counter-indicated by this study. Therefore, one can legitimately ask what are the implications of this particular experiment? Clearly one result is that massive doses of reinforcement are not necessarily effective. It behooves the researcher and, more importantly, the teacher to examine the instructional system and decide when to use what kind of contingency. More generally it speaks to the question of what kind of instructional techniques will work best for what kind of student. Laboratory research should not be taken whole into the classroom situation without some kind of analysis. The world is not populated by college sophomores and white rats, but we must decide what characteristics of these lower organisms we can count on to be present in our students.

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ESTABLISHING A READING CENTER IN A COMMUNITY JUNIOR COLLEGE -
THE FLINT, MICHIGAN, INDIVIDUALIZED PROGRAM

Clarence A. Anderson
Flint Community Junior College

"What Do Teachers Think about English in the Two Year College?" is a timely article, with reference to reading, that appeared in the September 1966 issue of the Junior College Journal. The article reports that 68 per cent of all two year colleges surveyed have remedial English programs, largely remedial reading and grammar review. The article further states that there seems no doubt to anyone that the work in reading is absolutely necessary. However, only 10 per cent of all those teaching in such programs have had any special training whatsoever (2). One can conclude from this report that the establishment of sound reading programs with trained teaching personnel is of paramount importance.

The reading program developed at Flint Community Junior College the past two years is centered in a $25,000 Reading Center which caters to students and interested adults at all levels of reading development. A reading center at our college became a necessity because 1) English teachers, who generally should accept responsibilities for the reading skill improvements in their students, are not qualified through training and experience to assume these responsibilities, and 2) students deficient in reading skills are now scheduled into English courses where reading improvement is not a part of their remedial program.

Abating the reading problem at Flint Junior College through its Reading Center is a complete departure from traditionally recognized ways and means of handling incompetent readers at the college level. The approach is essentially that of the "individualizing of instruction," and largely incorporates programmed and semi-programmed reading materials geared to individual treatment. Only the large universities with complete reading and counseling staffs have done much experimenting with this type of programming. Raygor (2) recently reported on the success of this venture at the University of Minnesota. He stated that the Reading and Study Skills Center, under the individualized plan, has improved its effectiveness more than he would have believed possible, by changing from a lock-step, mass program that assumed equivalent needs on the part of all students. In individualizing reading instruction within our Reading Center at Flint, we know from testing and other information that students differ in the ability to read, and secondly, we believe that having a student compete with himself is a more effective technique than having the student compete with others.

Once admitted to the Reading Center, the students find the procedure is very simple and streamlined. Each one is given the Coop Reading Comprehension Test (1960) and the EDL Word Clue Test. Other tests are administered if needed, but the testing program must be practical. The EDL Reader's Inventory provides the necessary insight into a student's reading interests, attitudes and habits, his educational and vocational background, and what he expects to gain from the course. The Inventory is also used as the cumulative folder for each student. Finally, a reading program and plan of action is developed in consultation with each student.

Initiating each student into an individualized program is facilitated by the physical makeup of the Reading Center and the availability of graded, self-help instructional materials. The Reading Center itself is a converted 35' by 23' classroom containing 30 new Acousti reading carrels plus 6 older versions locally constructed. A Jr. Controlled Reader is available at each Acousti carrel, with two carrels, in addition, wired with tapedecks for the Listen and Read programs. Fourteen sets of filmstrips at 8 reading levels are available for use with the Controlled Readers. Other equipment includes 6 Skimmer and Scanners (EDL), 3 Tachist-o-Viewers and graded filmstrips, 3 Craig Readers with accompanying slides, 3 Shadowscopes, 1 EDL Reading Eye, 1 Keystone Visual Survey, and numerous other mechanical devices.

The heart of the reading program centers in the instructional material itself. In the development of vocabulary, the EDL Word Clue series (7 levels), Programmed Vocabulary (Brown), Vocabulary Growth (Coronet), How to Improve Your Reading (Coronet), and SRA Words (Markle) are used. The EDL Word Clue materials have been rated as most helpful by students, not on the basis of vocabulary growth seldomly reflected in vocabulary testing, but in terms of word meaning techniques which affect comprehension. In the development of comprehension and speed of comprehension, the EDL Controlled Reading Study Guides GH through MN are principally employed. They are largely used with the filmstrips; on occasion, they are used with the Shadowscope. Also employed in the development of comprehension and speed, varying with individuals, are EDL Skimming and Scanning texts and workbooks, Be a Better Reader series (6 levels) by Smith, used for reading in the content fields and highly praised by students, The Reading Laboratory Skill File, the McCall-Smith Test Lessons in Reading, and the SRA Advanced Reading Skills Program with portable accelerator, by Simpson.

The self-instructional teaching approach enables us to handle a large number of students and still cater to individual reading needs. This current semester, 275 students, meeting three times weekly, are serviced in the Reading Center. The staff consists of but one reading specialist and one student assistant, the latter employed 10 hours per week. It is estimated that if these 275 students were handled in the traditional, group approach, two additional full time teachers would be needed. Thus our college Reading Center, in terms of faculty teaching load, has one reading teacher doing the work of three teachers.

In evaluating the overall reading effort, our belief is that the program is successful. Student reaction, both oral and written, has been excellent. In evaluating growth by objective measurement, the percentile band concept developed by ETS is used. In using percentile bands for comparative purposes, it is possible to say with greater certainty that one test standing is higher than the other, in favor of real reading gains. Our reading program, in terms of success based on the percentile band concept, is most encouraging.

One pronounced shortcoming of the program is the lack of clinical counseling for those in need. The most obvious cases are referred to counselors in Student Personnel Services, but this operates independently of the Reading Center.

An individualized, self-help reading program poses an intriguing challenge in higher education, particularly to the community college with its urgent need for improved student reading. With the great number of students in need of reading improvement, whether remedial or developmental, and the acute shortage of trained reading personnel, self-direction and self-instructional programming is almost the mandatory solution. We have every reason to believe that this approach is working in Flint.

Clarence A. Anderson

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THE LORAIN COUNTY COMMUNITY COLLEGE READING-STUDY SKILLS PROGRAM

Paul R. Kazmierski
Lorain County Community College

In the introduction to the 1879 edition of McGuffey's Fifth Eclectic Reader (4) the following statement was made:

> The great object to be accomplished in reading as a rhetorical exercise is to convey to the hearer, fully and clearly, the ideas and feelings of the writer.

This paper on reading shall seek to accomplish this goal in the best rhetorical exercise this writer can convey, even though I'm not old enough to have had the privilege of McGuffey's training.

In 1963 the people of Lorain County, Ohio, established a publicly-supported comprehensive community college. The college opened in September, 1964, with an enrollment of 1000 students in make-shift classrooms spread across the large county. This year the college enrolled 3,200 students on a 250-acre, 11 million dollar campus.

In the preliminary stages of development the faculty and administration recognized as basic philosophy the inclusion of a complete developmental education program.

In structuring the offerings of "remedial" courses the college attempted to overcome a traditional problem in this service, that is, in many universities and colleges, remedial programs are attached to a department such as English, Education, or Psychology and consequently receive "second-class citizen" status by faculty and students alike.

L.C.C.C. organized a separate Division of Special Studies and now a special department directly under the Dean of Arts. The staff is composed of learning specialists in remedial and developmental reading, math and communication arts. As a result of this early foresight the Department, the faculty and, ergo, the students enrolled in its offerings have the respect and acceptance that is common in other college areas.

The Developmental Education Department, sometimes referred to as the Learning Skills Department, has four major purposes.

(1) To provide a unified remedial program of courses and laboratory experiences for students who lack competencies in advanced disciplines because of inadequate preparation;

(2) To provide a developmental program of courses and laboratory experiences for students who have minimal competencies, but wish to expand their capabilities to maximum potentiality;

(3) To provide limited academic and technical tutoring for students requiring assistance in special subject areas;

(4) To provide a resource for expansion, experimentation, techniques, and methods.

The Department offers a series of courses in Reading, Study Skills, English, and Math. In addition, there is a structure of referral laboratories, which will be explained in a later part of this paper.

Paul R. Kazmierski

The Reading-Study Program

The Reading-Study Skills Program is an integral part of this departmental organization and has a statement of beliefs that complement the Department's purposes. Space does not permit the complete listing of these purposes but they are available upon mailed request.

There are three course offerings in the program. As usual in catalogue listings, the titles are virtually meaningless, but there is an extensive amount of psycholinguistic consultation that went into the titles, again because of "student-status" factors. The catalogue lists semester credit hours for each course, but they are for contact-time designations and fee charges. The three courses, like all courses in the Department, carry no transfer, or college credit for graduation.

The three courses are titled:

(Learning Skills) L.S. 070 Fundamentals of Effective Reading (3)
L.S. 071 College Learning Skills (3)
L.S. 072 College Reading Techniques (3)

Selection Procedure

Before describing the course contents, let's look at course placement.

Students at L.C.C.C. present, at admission, the American College Testing Scores, high school transcripts and other test data from the secondary schools. Other than the ACT, there are no group administered placement or selection tests for our "open-door" college. Based on this information the professional counseling staff may recommend enrollment in one of the reading courses. Group placement tests, hopefully, will play a role in the near future.

If a counselor is in doubt about an individual placement in a reading course, a staff member of the department is available for consultation and test administration.

Generally, students who display serious verbal deficiencies will be placed in L.S. 070. The traditional reading-study skill orientation course is L.S. 071. Learning Skills 072 is designed for students who have average college reading skills, but desire improvement in rate flexibility, critical skills, etc. Students may be recommended for a series of these courses. Inter-course placement is attempted if a student seems improperly placed after the "course diagnostic testing."

In-course testing is rather extensive; pre-post testing procedures are used for this evaluation. Particular tests vary according to course, but do include a general survey of reading, flexibility measures, capacity evaluations and many informal inventories of specific skills. We use individualized and psychological instruments as necessary. Attitudes, projective techniques and self-concept inventories are also used.

All tests are interpreted and reported to students in planning course emphasis. Final reports are also presented and interpreted as a replacement for grades. The only grades reported are S and U. (S for attendance, U for non-attendance.)

Course Procedures

All three courses are as individualized as possible, based on diagnostic measures. All three have basic tests, but are used according to need.

The basic Fundamentals course is the least structured of the three offerings. This, of course, is due to the broad range, or as Dr. Helen Robinson suggests, "the multi-causality factor." There are primary instructional areas such as main idea comprehension techniques, previewing, analytic word-attack, etc. The majority of instruction is in small groupings according to needs, with much laboratory work.

"Hardware" is available, but is motivational in nature. Conventional "Software" materials are in abundance and used in various manners.

The course uses some innovative materials as standard procedure. The majority of these are used, however, in pilot research operations. For example, the Bloomer (1) "Cloze Materials" are being used successfully.

L.S. 071, College Learning Skills, is more structural according to procedures used across the country. We deal with scheduling, organizational skills, listening, notetaking, exams, study-type reading, rate flexibility and elementary research techniques.

The materials in this program are traditional to reading-study skills courses. We are working with some pilot materials in listening skills and will probably get involved with T.V. procedures, to a degree.

The third reading course, L.S. 072, is perhaps the one that could receive the title "Speed-Reading." This title is not used, however, because the course is concerned with flexibility of rate, vocabulary, and critical reading skills, in addition to "pure rate."

Referral Laboratory

Because of our lack of complete placement procedures and because of immediate and/or minor reading-study skills difficulties, a referral laboratory is available for all students enrolled at the college. Perhaps the best explanation of its operation could be shown by reading excerpts from a student-written article in the campus newspaper.

> "If you have study problems, the place to go is the Learning Skills Center...you can drop in to make an appointment at the Center from 9 a.m. to 3 p.m. Monday through Friday. The lab provides a relaxed atmosphere, complete with coffee and ashtrays...Students are given a combination of help including diagnosis of problems and counseling with reference materials at hand...The majority of students seek help themselves...Students referred by instructors are in the minority..." (2)

The lab is on a non-fee basis, currently. Since it is a costly operation, it may have some future problems.

Effectiveness of the Program

Results of the total program are extremely difficult to obtain. The "Dean's report," as it is called on many campuses, always reflects glowing improvements in elaborate pre-post test results, grade point improvement, etc. The entire area of evaluation could be a topic of a series of North Central Reading Association Conferences.

In addition to our usual "Dean's Report," which I will not bore you with, there are some unique measurement results which are briefly outlined below:

(1) Because of the nature of the comprehensive Community College and its "open door" policy, there is an annual enrollment of 300 to 500 students who would not normally be enrolled in a regular college program.

These "deficient" students have no college restrictions for load during the first semester. The counseling staff recommends limited "loads" with one or more Learning Skills courses. 150 to 200 of the "deficient" group agree to limiting their load. Of this group, who take one or more reading-study skills courses, 25% have successfully completed our degree program.

(2) There is a marked improvement in the reading scores and grade-point averages of students enrolled in semi-professional-technical areas compared to college-transfer students.

(3) Each semester there is an average of 5 to 8% of the total college enrollment taking a reading-study skills course. Tentative conclusions indicate that other student successes account for a substantial part of this popularity.

(4) Students using the reading-study skills referral lab have increased well beyond the ratio of college enrollment to student usage figures. Again the Department attributed this to other students having found success.

(5) Our coffee bills have been growing.

In conclusion, it is suggested that the program is costly, but profitable. Its success is attributed to the many beneficial factors of "separate" department status; combination of courses and independent labs; enormous supplies of materials; cooperation from the administration; an outstanding staff; and a community with foresight.

> "The great object to be accomplished in reading...is to convey...ideas and feelings..."

Paul R. Kazmierski

We have met our "great object" at Lorrain County Community College.

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A STUDY OF THE EFFECT OF A COLLEGE READING PROGRAM UPON GRADE-POINT AVERAGES IN ODESSA COLLEGE, ODESSA, TEXAS

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A study was made to determine the effectiveness of the developmental reading program in Odessa Junior College, Odessa, Texas, by making a comparison of the grade-point averages for one academic year, 1963-64, of forty matched pairs of students. One group of forty students had reading instruction and is referred to as the experimental group. The control group had no reading instruction.

The purpose of this study was to formulate conclusions while answering these basic questions:

1. Do students who take a reading course make better grade averages than those who do not have reading instruction if they have initially the same ability?
2. Are there any sex differences with respect to the number of males or females who take a reading course?
3. Do students who take a reading course show a substantially higher percentile gain than those who have not had such a course?
4. Are the students who take reading able to retain the gains achieved over a long period of time?

The experimental population was drawn from a total available freshman population of five hundred ninety students who took college guidance examinations in the fall of 1963. Out of this population, two hundred ninety-three students attended Odessa College for at least two semesters. The experimental and control groups were chosen from this population.

The forty pairs of students were matched on five variables: initial reading score on the Nelson-Denny Reading Test, SCAT score, class, load, age, and sex. The means for each group appear in Tables I and II. The groups appeared to be very similar and were able to be compared.

The students in the experimental group enrolled in a one-semester, one-credit reading course designated as English III. The Nelson-Denny Reading Test, Diagnostic Reading Test, and Word Clues Test were administered at the beginning in order to determine placement level. Other informal methods of diagnosis were used also in determining reading strengths and weaknesses. On the basis of this initial diagnosis, proper materials were assigned each student.

In the beginning lectures were given concerning poor reading habits, SQ3R formula and other methods of organizing study. Particular attention was paid to developing the proper mind set and establishing proper student teacher rapport. Each student had an opportunity to counsel with the instructor about special reading problems in specific courses.

Students read recreational material on accelerators and saw Controlled Reader filmstrips. After using a visual device the student transferred to commercial materials using timed reading exercises. Each student worked on several different kinds of materials according to his needs and level of ability. Much encouragement was given at all times. Students were allowed to read on the machines or use the materials as much as they desired.

TABLE I. MEAN AGE AND CLASS LOAD (NUMBER OF SEMESTER HOURS) OF STUDENTS ENROLLED AND NOT ENROLLED IN READING

	Enrolled		Not Enrolled	
	Male (N=21)	Female (N=19)	Male (N=21)	Female (N=19)
Mean Age	20.76	19.05	20.62	19.68
Mean Class Load	24.43 s.hrs.	24.16 s.hrs.	24.52 s.hrs.	23.32 s.hrs.

TOTAL	Enrolled (N=40)	Not Enrolled (N=40)
Mean Age	19.91	20.15
Mean Class Load	24.29 s.hrs.	23.92 s.hrs.

TABLE II. MEAN SCAT AND READING RAW SCORES OF STUDENTS ENROLLED AND NOT ENROLLED IN READING

	Enrolled		Not Enrolled	
	Male (N=21)	Female (N=19)	Male (N=21)	Female (N=19)
Mean Reading	60.952	62.474	61.143	63.58
Mean SCAT	286.24	264.53	288.33	285.74
TOTAL	Enrolled (N=40)		Not Enrolled (N=40)	
Mean Reading	61.675		62.05	
Mean SCAT	275.39		287.04	

At the end of the course students in the experimental group were given alternate forms of the Nelson-Denny and Diagnostic reading tests. The control group had no formal reading instruction.

Analysis and Interpretation of the Findings

The mean reading and SCAT scores were somewhat higher for those not enrolled in reading. The average class load for those enrolled in reading was 24.29 semester hours while the other group took 23.92 semester hours of credit. If either group had any initial advantage, it was the group who was not enrolled in reading. Therefore, any differences of achievement favoring the reading group would be impressive.

The first statistical test utilized in the study was a matched pairs "t" to determine the significance of the mean difference between the experimental and the control groups in terms of grade averages. The "t" test was selected because the data could be construed to have met most of the assumptions associated with a parametric test.

The first null hypothesis stated that students who take developmental reading do not make a higher grade-point average than those who do not. This hypothesis was rejected. Those enrolled in developmental reading did make higher grade-point averages. The obtained value of the statistic ($t = 8.938$, $df = 39$) was statistically significant beyond the $\alpha = .001$ level. The grade-point average for those enrolled in reading was 1.186 while the grade-point average for the other group was 1.035.

There appeared to be a relationship between the reading scores and the grade-point averages. The males had an initially lower mean reading score and also a lower grade-point average than the females. This may be interpreted to mean that reading scores do influence academic achievement.

One would anticipate, according to other studies that have been made, that the verbal scores on the SCAT would be lower for the males. However, this was not true and the SCAT scores appeared not to be as significant as the Nelson-Denny reading scores for predicting academic success.

Students, however, who had both a high initial reading score and high verbal SCAT score appeared to have substantially higher grade-point averages than those with low scores on both tests. This would indicate again that these two tests are important in relation to academic achievement.

The high achievers also took a greater number of semester hours credit, in most cases, than low achievers. Good basic reading skills apparently determine the number of credits a student can successfully carry during a semester.

The second statistical test was the chi square to evaluate the null hypothesis that there are no more males than females who take developmental reading. The various claims to sex differences would lead one to expect that a greater number of males would take reading than females. There was no statistical difference found in this study. The ratio between the number of males taking reading was nearly equal to that of the females. Among those who took reading the females did better than the males.

Follow Up Study

In addition to working with the forty matched pairs, the decision was made to collect other data in order to support the study of grade-point averages discussed previously. Twenty-three students who had not taken reading were given another form of the Nelson-Denny Reading Test in the spring of 1965. Many of these students were the same ones used in the matched pairs study. It was impossible to use exactly the same population since many of the students were attending school elsewhere or had dropped out of school completely.

This test was given in order to substantiate the fact that students enrolled in reading do make important gains in the areas of vocabulary, comprehension, and rate. Freshman norms were used in determining the percentile for the first test given in 1963. In 1965, sophomore norms were compared with the earlier percentile scores. These determined the gains made on the Nelson-Denny Reading Test.

On the average those who took reading improved their scores on vocabulary, comprehension, rate, and total score much more than those who did not take reading. However, while a statistical analysis of the data would undoubtedly be significant, the results would be misleading due to the fact that the group who took the reading course had more room to improve. The students in the group who did not take reading, for the most part, already had a high level of reading ability and could not improve much more because they had reached the upper limits of the test.

The largest gain made in each group was in rate of reading. Since there is so much more assigned reading in college than in high school, the students may have found that they were forced to read faster to cover the assigned materials. The group who took reading had a mean gain score in reading rate of 33.8 while the other group only gained 1.97.

In vocabulary the mean gain score for the group enrolled in reading was 12.91 while the other group regressed -.047 per cent. It was difficult to understand this regression. Perhaps the students were motivated on the first test to perform well because the test was part of a battery of college entrance examinations. They took the second test largely as a favor to the instructor and realized that this score would not affect their status in any way.

The group who was enrolled in reading increased 11.06 per cent in comprehension, while the other group increased .083 per cent. These figures indicate that, as a result of receiving help in comprehension skills, the group who took reading made substantially higher gains than did the other group.

The results obtained in the entire study support the hypothesis that students with average, below average, and even low reading ability can improve their basic reading skills in a carefully planned program of improvement.

The major conclusions found in this study are presented as follows:

1. The grade-point average was significantly higher for the experimental group.

2. There was no statistical significance in the number of males versus females who took the reading course in proportion to the population.

3. Students who take reading make higher percentile gain scores on comprehension, vocabulary, rate, and total score as measured by the *Nelson-Denny Reading Test*.

4. Students who take reading tend to retain most of the gains made in the reading scores for a period of at least one year.

5. At least one conclusion, observed by the author and mentioned by various other researchers, is the fact that students who

take the reading course and remain in college seem to be harder workers and are better motivated than students who avoid taking reading instruction.

Educational Implications

1. There were indications that time and money spent on a college improvement reading program is worthwhile.

2. A study should be made of the number of dropouts in the reading program to determine the role it plays in keeping students from withdrawing.

3. Parallel studies could be made of other programs for purpose of comparing the effects of different combinations of activities and types of instructional treatment.

4. A further study should be made of personality factors and attitudes as they effect reading improvement.

5. The factor of motivation appears to be important and should be investigated.

6. Further investigation should be given to factors which inhibit the response of some student to training given in reading.